Spring Sales Meetings Preface Concentrated Campaign

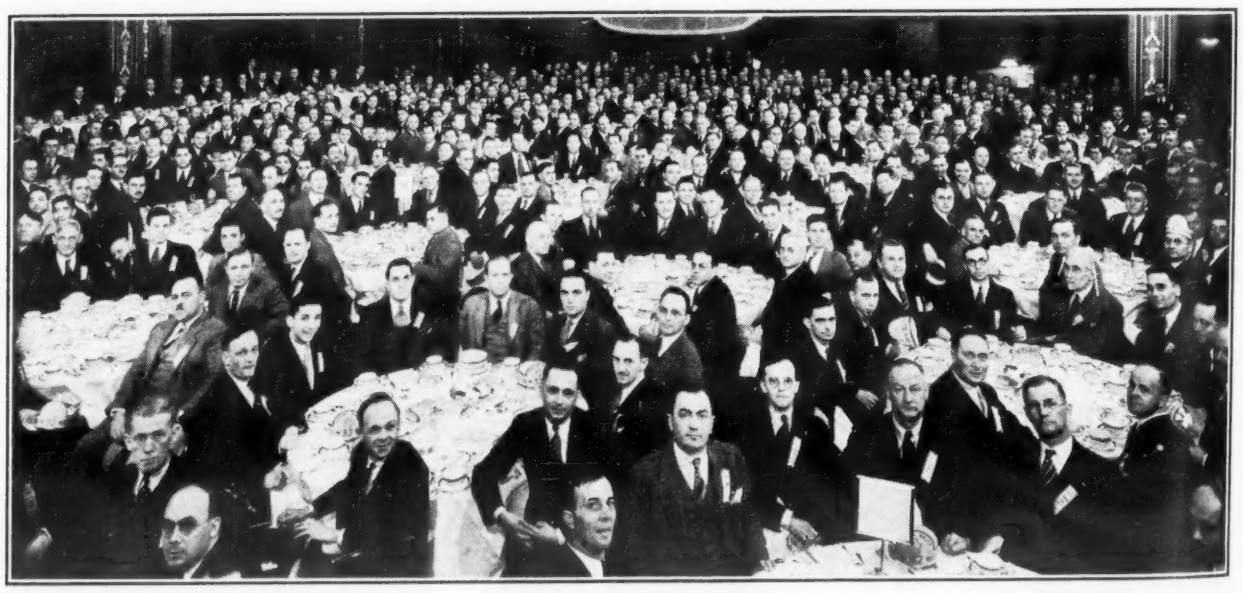
Majestic's new standard line of electric refrigerators in the low price class was introduced to dealers working under the Harry Alter Co., Chicago distributor, at a recent meeting in the Congress hotel.

Westinghouse Salemen Hear Plans

1932 sales plans for Westinghouse electric refrigerators were presented in a series of distributor meetings recently. The photograph shows the meeting of Frank H. Johnson & Son, Chicago distributor.

Entertainers from the Fanchon & Marco act at the recent Atlanta refrigeration show paid a visit to the Servel exhibit.

"Ask for the Order Often." This is the 1932 Westinghouse sales slogan which R. L. Sanner of the Sales Promotion department is explaining.



Four troupes of factory representatives of Frigidaire Corp. recently finished a national barnstorming tour in which the 1932 sales plans were explained. The photograph shows the banquet held in Penn Athletic Club, Philadelphia.

Nurses, Buglers, Drummers and Singers Aid in G. E. War

Nurses are doing their part in the Burns division of the Army (Philadelphia) of G. E. Refrigerania in the war against Sales Resistance.

Adelphia quartet contributed to the war proceeding in Philadelphia with wartime songs.

Bugles and drums were played at the enlistment of the Burns army by members of Houston Post Drum Corps, 69-piece Legion outfit.

WRITTEN TO BE READ ON ARRIVAL

Merchandising Section

IN TWO PARTS PART ONE

ELECTRIC REFRIGERATION NEWS

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The business newspaper of the refrigeration industry

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SENATORS HEAR OBJECTIONS TO TAX

EASTERN GROUP DISCUSSES SALE OF MAYFLOWERS

Distributors Take Part In First Regional Meeting

NEW YORK CITY—Discussing the phases of their jobs in which they have been particularly successful, leading distributors of Mayflower electric refrigerators in the East occupied the spotlight at the Eastern regional meeting of Mayflower distributors, April 14, at the Waldorf-Astoria.

Among distributors who talked on their specialties was Hollis Vaughn of the Wahn Radio Co., Boston, who related his methods of cooperation with utilities in his territory.

How to enter a new territory and establish a line of refrigerators quickly and strongly was outlined by George Tatem of Newark Distributors, Newark, who began in December, 1931, with local advertising, and now plans to move 5,000 to 10,000 units this spring.

Milton Goldsmith, head of Samuel S. Glauber Co., New York City, told of methods used to gain apartment business in Manhattan and the Bronx.

M. J. Miller of W. A. Case & Sons Mfg. Co., Brooklyn, N. Y., described the development of apartment house and dealer retail business in Brooklyn and Long Island.

Harry Ellis of Philadelphia Distributors, stated that the development of his territory rested upon continuous local advertising, absolute protection to the dealer and his territory, and educational meetings.

Every Thursday night is school night

(*Concluded on Page 8, Column 5*)

McELHINNY CLOSES SERIES OF DEALER CONVENTIONS

MT. CLEMENS, Mich.—W. D. McElhinny, vice president in charge of sales, Copeland Products, Inc., will return this week from a series of dealer meetings which he has been attending through the South.

Friday, he was principal speaker at San Antonio, Tex., at a meeting attended by dealers from all of Texas. Other cities on his itinerary were St. Louis, Monroe, and New Orleans, La.; Ft. Worth, and Houston, Tex.

Mr. McElhinny also attended district dealer conventions in Cleveland, Indianapolis, Chicago, and Milwaukee.

DIPIETRO TO HEAD LIQUID COOLER EASTERN SALES

DETROIT—C. V. DiPietro, formerly manager of the beverage division, Liquid Cooler Corp., has been appointed regional manager of the eastern territory with headquarters in New York City.

Prior to his connection with Liquid Cooler Corp., Mr. DiPietro was engaged in the manufacture and sale of refrigerated soda fountain, restaurant, and hotel equipment.

His present duties will include contacting national and chain store organizations.

KELVINATOR DISCONTINUES MANAGER OF BRANCHES

DETROIT—Discontinuance of the position of manager of branches, which has been held for some time by Godfrey Strelinger, has been announced by H. W. Burritt, vice president in charge of sales of Kelvinator Corp.

Strelinger has been appointed manager of the factory branch at Boston. Harry Troutwine is handling special assignments on distributor-dealer organization work.

Holds Meetings

L. G. LINDSAY
Trupar vice president is supervising regional conventions.

MERRIAM GAINS LEAD IN G. E. WAR DRIVE

CLEVELAND—A. Wayne Merriam, who but a few months ago was granted a General Electric refrigerator distributorship franchise in Albany, N. Y., entered the fourth week of the Monitor Top War campaign as Generalissimo of the Allied Armies.

He replaced Gordon Smith of the Alabama Refrigeration Co., who for the first three weeks held a firm grip on the leading position.

H. A. Pendergraph of Pendergraph-Brown, distributor in Memphis, Tenn., was promoted to general in command

(*Concluded on Page 8, Column 5*)

Tips to Salesmen

According to the April Survey of Current Business issued by the Dept. of Commerce, there were $5,498,000,000 *in circulation* on March 26, 1932, compared with $4,577,000,000 at the same time in 1931.

There is an extra *billion dollars* in pockets, socks, mattresses, and cookie jars—that much more *ready money*—waiting to be spent.

G. E. ANNOUNCES 4-YEAR SERVICE CONTRACT PLAN

Zimmerman Explains Details of New Guarantee

CLEVELAND, April 19.—A four-year service plan "with a service contract protecting each new buyer against all service and repair charges on the Monitor Top mechanism for three additional years beyond the standard one-year warranty" was announced today by P. B. Zimmerman, general manager of the electric refrigeration department of General Electric Co.

A factory unit is installed without charge if the mechanism fails during the contract service period under the new plan. The "standard one-year warranty" applies to the cabinet.

The introduction of the new plan was accompanied by the launching of a special half-million dollar trade paper, magazine, and newspaper advertising campaign, increasing the refrigeration department's advertising budget to well over $7,000,000, according to W. J. Daily, sales promotion manager.

Mr. Zimmerman's statement said: "The average car is driven 60,000 miles. At 30 miles an hour this is 2,000 operating hours. In one single year any automatic refrigerator must operate over 3,000 hours. In four years the mechanism of your refrigerator will have to equal the average lifetime wear of more than six automobiles.

"During the past four years the public has invested over $300,000,000 in General Electric refrigerators," Mr. Zimmerman states.

REFRIGERATION DIVISION OF NEMA MEETS MAY 18

NEW YORK CITY—The meeting of the NEMA refrigeration division and committees, scheduled for Wednesday, April 27, at the Hotel Cleveland, has been postponed until Wednesday, May 18, according to announcement from E. S. Aumend, acting secretary of the division.

Continued hearings before the Senate Committees on tax matters make this postponement advisable.

Ruthenburg Presents Industry's Case in Scholarly Manner

BY GEORGE F. TAUBENECK

WASHINGTON, D. C., April 19 (Special Wire)—In what senators declared to be the most competent and scholarly presentation of the case for a particular industry yet made before the senate finance committee in its hearings on the House revenue bill, Louis Ruthenburg, president of Copeland Products, Inc., and chairman of the refrigeration division of the National Electrical Manufacturers Association, today told the committee that the electric refrigeration industry is willing to pay a fair share of the nation's tax burden, but that it objected seriously to the discrimination of the House bill; and suggested in its stead a general manufacturers sales tax or a broad base manufacturers excise tax.

House of Representatives Bill No. 10,236, on which the Senate Finance Committee is holding hearings, provides a "luxury tax" of five per cent of the manufacturers price on household mechanical refrigerators (including parts and accessories therefor).

Powell Evans, who retired last fall as president of Merchant & Evans, pointed out to the senators the harm that such a tax might work on small manufacturers of electric refrigerators.

Mr. Ruthenburg's speech came at the close of a long and trying day during which the Senate committee had listened to almost pitiful pleas from representatives of the copper, lumber, fur, jewelry, and boat industries, all seeking to influence the removal of the proposed sales taxes on their products.

Some of these speakers, especially the manufacturers of furs and jewelry, declared that enactment of this bill would put them out of business and smash their already reeling industries.

Protests of the radio and automobile industries are reported on page 16 of this issue.

All these men presented figures showing gigantic declines in business in their industries during the last two years, and still more startling declines for the first three months of 1932. Speakers yesterday, including representatives from the radio and automotive industries, told the same bleak stories.

In contrast to the preceding speakers, who had shelled the senators with all the varieties of high-pitched oratory and bombastic rhetoric in their repertories, Mr. Ruthenburg calmly and dispassion-

(*Continued on Page 4, Column 1*)

KELVINATOR BUYS OIL BURNER CORPORATION

DETROIT, April 18.—Announcement of the purchase of assets and patents of the Maise Corp., manufacturer of the Rightway Oil Burner, was made by Kelvinator Corp. last week.

New York and Detroit factory branches will be selling the Rightway immediately, Kelvinator officials stated.

Charles Van Maanen, assistant general sales manager of the Maise Corp. at the time of its purchase by Kelvinator, will be sales manager of oil burner activities under the new set-up.

Mr. Maanen has been in the oil burner business since 1923, and was associated

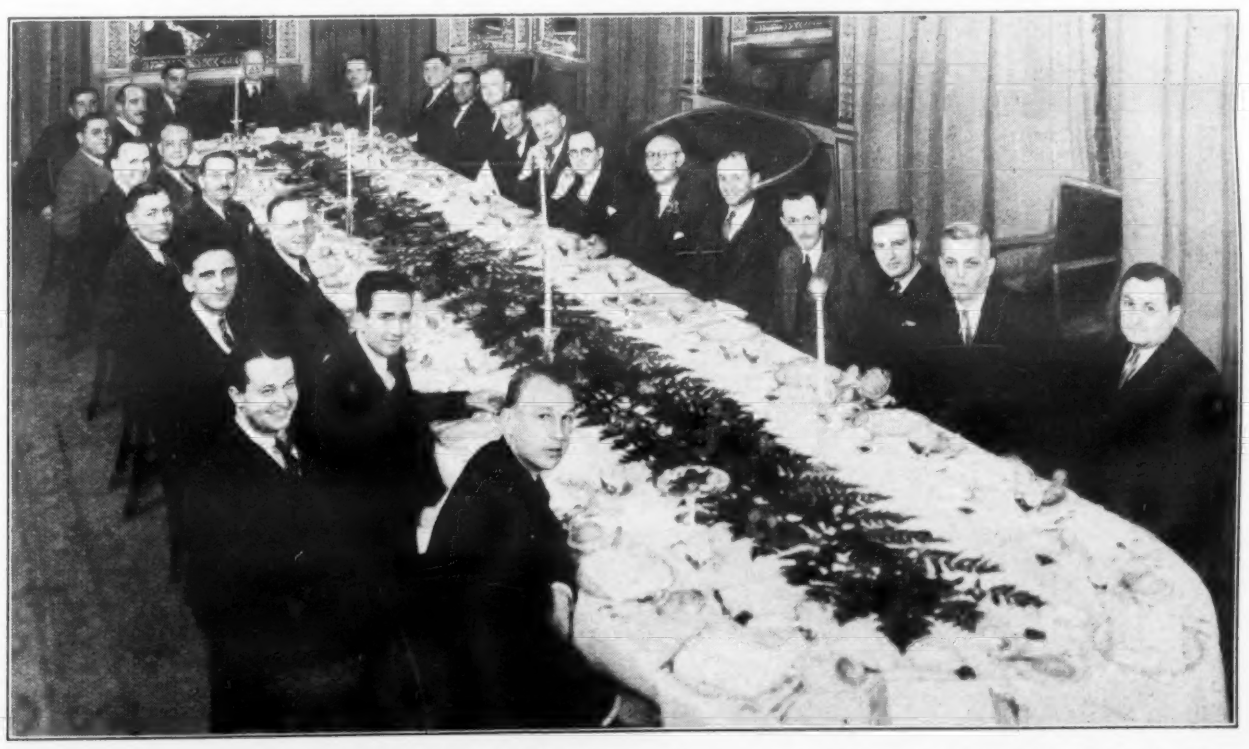
(*Concluded on Page 8, Column 5*)

Two Small Dots

SAN FRANCISCO — Only two boats a year call at Christmas Islands, shown on the map as two small dots in the Pacific Ocean.

Kieruff & Ravenscroft, Mayflower distributor in San Francisco, shipped a Model 61 Mayflower to E. Rougier at Christmas Islands by one of these boats last week.

Mayflower Distributors Exchange Ideas



Eastern distributors of Mayflower electric refrigerators exchanged sales ideas at a regional meeting in New York City last week. Factory officials were presented and explained their policies.

WESTINGHOUSE REDUCES PRICES ON REFRIGERATORS

MANSFIELD, Ohio—A price reduction on all Westinghouse dual-automatic refrigerators, bringing the price range from $149.50 up, has been announced by C. E. Allen, commercial vice president of Westinghouse Electric & Mfg. Co.

APEX REPORTS PROFIT OF $157,549 FOR 1931

CLEVELAND—Apex Electrical Mfg. Co. financial reports for the year ended Dec. 31, 1931, show a net profit of $157,549 after depreciation, federal taxes, etc., have been deducted, it has been announced.

This is equal to earnings of $1.05 a share after preferred dividends. Earnings for 1930 amounted to $1.83 on common stock. Current assets at the end of December totaled $1,410,767, and current liabilities $227,396.

VAN BENSCHOTEN NAMED RANGE DISTRIBUTOR

DETROIT—The appointment of John Van Benschoten, Inc., of Poughkeepsie, N. Y., as distributor of Electrochef and Waldorf ranges has been announced by Gerald Hulett, sales promotion manager of Electromaster Inc.

Now a 4-YEAR

General Electric makes an Important Announcement to those interested in the sale and servicing of electric refrigerators

WE HAVE replaced many thousands of refrigerators of other makes which have been in service *only* two or three years. They were replaced because the excessive cost of servicing and maintaining them made it cheaper to buy new machines.

Low first price is not low cost. The few dollars a user might save today by buying a cheap refrigerator can quickly be consumed by repair bills and service charges. When the mechanism fails the refrigerator becomes just a box.

An Automobile Comparison

The average car is driven 60,000 miles. At 30 miles an hour this is 2,000 operating hours.

In one single year any automatic refrigerator must operate over 3,000 hours. In four years the mechanism of a refrigerator will have to equal the average lifetime wear of more than *six* automobiles.

The Heart of the Refrigerator is the Mechanism

70% of any refrigerator investment goes into the mechanism. A good cabinet will last for years. The finish may scratch, or chip, or be marred, but is easily repaired. The thickness and insulating qualities of a cabinet and its durability are very important, but the heart of the whole refrigerator is the mechanism. *It is unfair and misleading to misrepresent these facts.*

General Electric knew all these conditions before our scientists and engineers approved the General Electric Refrigerator for public use. Other types are cheaper to manufacture and can sell for less; but we believe that no other type will give equal satisfaction, or as low a total cost of refrigeration over a period of years.

The Monitor Top

When the General Electric Refrigerator was designed, it was known that stuffing boxes would leak—so they were eliminated! Belts could break—so they were eliminated! Fans could get out of order—and they, too, were eliminated! Too much or too little oil caused trouble—so we eliminated the need for oiling. The General Electric Refrigerator never needs oiling—another important and exclusive feature.

The General Electric mechanism is a complete unit, compactly designed and built—hermetically sealed-in-steel—protected against tampering and against the ravages of air, dust and moisture, the agents of deterioration which make repeated repairs necessary.

Natural Air Cooling

The General Electric Monitor Top mechanism is entirely different from the hundred conventional type machines in appearance—in basic design—in operating principle—and in performance!

Different in appearance because it was designed to perform a task—and different in appearance in the same manner that the 1932 automobile is different in appearance from the best carriage ever made—uncovered as it should be to employ natural air cooling and to avoid the use of troublesome fans and belts and the consequent need for oiling.

The General Electric Monitor Top mechanism is the cleanest—simplest—most compact—trouble-free refrigerating mechanism known today.

Our Experience Record

General Electric labored to give the highest quality at lowest cost; and that it has succeeded is proven by the outstanding performance record in the hands of our million and a quarter users. It gained its leadership within eighteen months and maintains that leadership *now*. During the past four years the public has invested over $300,000,000 in General Electric Refrigerators.

GENERAL ELECTRIC

ALL-STEEL REFRIGERATORS

DOMESTIC, APARTMENT HOUSE AND COMMERCIAL REFRIGERATORS, ELECTRIC WATER COOLERS

SERVICE PLAN

AND NOW—A Four-Year Service Plan

As a result of experience General Electric was the first to offer two additional years guarantee beyond the standard one year warranty. Now after 20 years of research, including the experience of over four years of actual field service with more than a million and a quarter users, General Electric again steps ahead of the refrigerator industry with a service contract protecting each new buyer against all service and repair charges on the Monitor Top mechanism for three additional years beyond the standard one year warranty.

In case of trouble or failure General Electric does not patch the mechanism. A *factory unit is installed without charge* if failure occurs within the contract service period.

Today new low prices, the Four-Year Service Plan, $10 down payment and 10¢ a meal terms, the General Electric is an even greater value than ever before.

GENERAL ELECTRIC COMPANY

●

Millions have joined the ever-widening G-E Circle presided over by Grace Ellis, N. B. C. Coast to Coast network, daily at noon (except Saturday); Sunday, 5:30 p. m. (Eastern Standard Time.)

Ruthenburg Presents Case of Refrigeration Industry

Senators Listen to Presentation of Arguments Against Tax

. (*Continued from Page 1, Column 5*)

ately presented the case of an industry which is serving a human need, the preservation of health, and which has marched steadily forward through the depression.

The senators sat up and took nourishment. All day they had slumped in their chairs as the various witnesses had shed tears for their industries. The only interruptions the senators made during the unrolling of these pictures of woe and distress were occasional questions calculated to bring out inconsistencies in the testimony, and frequent wisecracks offered as comic relief.

Senators Read Section of Bill

Mr. Ruthenburg had uttered scarcely three sentences before there was a rustling of papers as the senators read the section of the bill relating to mechanical refrigerators, at once they began to ask questions, which Mr. Ruthenburg answered fully and pertinently.

Senators Watson of Indiana, Shortridge of California, and Connally of Texas did most of the quizzing.

From the tone of their questions and the tenor of their attitudes, it appeared that the senators who were present were not only impressed with the story Mr. Ruthenburg had to tell, but were sympathetic with the ends the refrigeration industry is trying to gain.

Mr. Ruthenburg's presentation followed closely the brief printed below, and so accurately had he divined in advance what the senators would like to know that he was able to answer practically every question put to him by referring to the brief and to the exhibits which accompanied it, some of which were furnished by ELECTRIC REFRIGERATION NEWS.

Sell People of Small Means

The task now facing the industry is that of selling to people of small means, Mr. Ruthenburg observed. Hence the tendency is toward smaller sizes, lower prices, and lessened profits.

Growth of the industry, he pointed out, has been made possible by the reduction of prices and the consequent enlarging of the market. The addition of a five per cent sales tax to the price of electric refrigerators might mean a reversal of the sales curve.

Such a sales tax would also be a psychological handicap to the progress of the industry, he declared, inasmuch as it would stigmatize an electric refrigerator by calling it a "luxury."

180,000 Persons Employed

The industry now employs an aggregate of 180,000 persons, he stated; and its continued rise should materially help lift the depression.

Three of the questions put by senators and not answered by the brief were as follows:

Senator Connally: "Since your sales volume has been steadily increasing, haven't you been able to lay away enough profits to be able to absorb this tax?"

Mr. Ruthenburg: "No. The industry has not been profitable over a period of years. The mortality among manufacturers has been high."

Senator Shortridge: "What is the life of an electric refrigerator?"

Mr. Ruthenburg: "I think most of the leading manufacturers today still have their first machines running. From the evidence at hand I should say that the life of an electric refrigerator is about eight or 10 years."

Senator Watson (facetiously): "Has not the increase in the manufacture of home brew helped push upward that sales curve of yours?"

Mr. Ruthenburg (maintaining a straight face): "Emphatically, yes."

Senator Connally (slyly): "Do you advertise that as a use for your products?"

Mr. Ruthenburg (grinning at last): "No, not publicly." (Hearty laughter from George Mason and Colonel Smith on the back row.)

Powell Evans Testifies

Powell Evans, who followed Mr. Ruthenburg, offered the point that other electrical appliances had absorbed experimental costs, and were more able to bear a tax burden than electric refrigeration, which alone of all household utilitarian appliances had been singled out for taxation.

"If a tax on refrigeration, why not one on cooking, heating, or washing?" he asked.

The electric refrigeration industry, he maintained, has not been successful financially. A total of more than five million dollars has been lost by investors in this industry, he asserted.

"The luxury of one day becomes the necessity of the next," said Mr. Evans. "An electric refrigerator is not used for display or amusement, but is placed in an obscure portion of the home to preserve food and health. Its cost is extremely low for so intricate a device."

In concluding he stated that there should be a speedy curtailment by the government of its expenditures and personnel, following the lead of industry in general."

Mr. Ruthenburg's "second" and unofficial aide was "Jeff" Johnson, president of Universal Cooler Corp.

Industry Leaders Present

Also present at the hearing were Colonel F. E. Smith, president of Servel, Inc.; Major Howard Blood, president of Norge Corp.; P. B. Zimmerman, manager of the refrigeration department of the General Electric Co.; E. G. Biechler, president of Frigidaire Corp.; George Mason, president of Kelvinator Corp.; C. J. Jolly, attorney, General Motors Corp.; and Glenn Muffly, of National Electrical Manufacturers Association.

Members of the Senate Finance Committee who were present when Mr. Ruthenburg made his presentation were Chairman Reed Smoot of Utah; James E. Watson of Indiana; Samuel M. Shortridge of California; Pat Harrison of Mississippi, and Tom Connally of Texas. Senator Wallace H. White of Maine, not a member of the committee, also attended.

Membership of Committee

The entire membership of the Senate Finance Committee is as follows: Reed Smoot of Utah, chairman; James E. Watson of Indiana; David A. Reed of Pennsylvania; Samuel M. Shortridge of California; James Couzens of Michigan; Henry W. Keyes of New Hampshire.

Hiram Bingham of Connecticut; Robert M. LaFollette, Jr., of Wisconsin; John Thomas of Idaho; Wesley L. Jones of Washington; Jesse H. Metcalf of Rhode Island; Pat Harrison of Mississippi; William H. King of Utah; Walter F. George of Georgia.

David I. Walsh of Massachusetts; Alben W. Barkley of Kentucky; Tom Connally of Texas; Thomas P. Gore of Oklahoma; Edward P. Costigan of Colorado; Cordell Hull of Tennessee; I. M. Stewart, clerk.

Mr. Ruthenburg's brief follows, together with the provisions of House Bill 10,236 which apply to the refrigeration industry. It should be noted that Title 4 (under which comes the manufacturers' excise tax on electric refrigerators) has a self-repealing section (Sec. 623), under which the tax on household mechanical refrigerators would lapse June 30, 1934.

Tax Presentation By Mr. Ruthenburg

Note: The following document in its entirety was transmitted by telegraph from Washington, D. C., to Electric Refrigeration News after its presentation by Mr. Ruthenburg.

To the Committee of Finance of the Senate of the United States.

Gentlemen:

The mechanical household refrigeration industry is here represented by a committee of the refrigeration division of the National Electrical Manufacturers Association. The members of this division as as follows: Copeland Products, Inc., Mount Clemens, Mich.; Frigidaire Corp., Dayton; General Electric Co., Cleveland; Grigsby-Grunow Co., Chicago.

Kelvinator Corp., Detroit; Norge Corp., Detroit; Servel, Inc., Evansville, Ind.; Tennessee Furniture Corp., Chattanooga, Tenn.; Trupar Mfg. Co., Dayton; Universal Cooler Corp., Detroit, and Westinghouse Electric & Mfg. Co., Mansfield, Ohio.

It is estimated that in 1931 this group manufactured and sold approximately 90 per cent of the mechanical household refrigerators.

The industry as here represented is in full accord with the Congress as to the advisability of balancing the national budget and has made no protest against the manufacturers' sales tax of which it is quite willing to bear its just share in the present emergency.

It is believed by this group that such a tax is greatly to be preferred to discriminatory taxes levied against certain industries or parts of industries.

The case of this industry with reference to the proposed tax is laid before your committee, not in a spirit of combativeness, but with a desire to place certain facts before you in a spirit of cooperation toward a fair and equitable decision.

10 Arguments Presented

The attitude of the industry toward the tax, certain facts in respect to the status of the industry and comments upon the probable effect of the proposed tax are respectfully submitted. It is proposed to show that:

(a) The items designated in the tax schedule of the proposed revenue bill evidently are selected luxuries, whereas the mechanical household refrigerator is the only utilitarian household appliance designated for taxation.

(b) The manufacture and sale of mechanical household refrigerators is a young industry involved in costly experimentation and development.

(c) The industry has not been generally profitable to investors.

(d) The present and future market for mechanical household refrigerators lies largely among families of moderate incomes.

(e) The proposed tax probably will curtail sales volume by increasing consumer cost.

(f) Mechanical refrigeration, far from being a luxury, is an instrument of health preservation and of thrift.

(g) Reduced volume in the industry will increase unemployment.

(h) The proposed tax will adversely affect allied industries.

(i) Refrigerator cabinets should not be taxed.

(j) The tax, if imposed, should not exceed that proposed for automobiles.

Refrigerators Are Not Luxuries

(a) The items designated in the tax schedule of the proposed revenue bill evidently are selected luxuries, whereas mechanical household refrigerators are the only utilitarian household appliances designated for taxation.

Examination of the proposed tax schedule indicates that, as a general proposition, it was intended to designate certain luxuries. The mechanical household refrigerator, peculiarly enough, is the only strictly utilitarian household appliance included in the entire list. Evidently there was no intent to levy a tax against utilitarian household appliances generally, otherwise the list would necessarily include many items far less necessary for the preservation of health and comfort than mechanical refrigerators.

Inasmuch as there is designated for tax only one of many household appliances, the proposal is highly discriminatory.

(Exhibit "A" is a reproduction of title 4, manufacturers' excise tax, in which the discriminatory nature of the tax schedule is indicated).

(b) The manufacture and sale of mechanical household refrigerators is a young industry involved in costly experimentation and development.

Young Industry

The number, retail value and average unit value of mechanical household refrigerators manufactured and sold during the past two decades is indicated by the following tabulation:

Year	Number	Retail Value	Unit Value
1910-1920	10,000	$ 6,000,000	$600
1921	5,000	2,750,000	550
1922	12,000	6,300,000	525
1923	18,000	8,550,000	475
1924	30,000	13,500,000	450
1925	75,000	31,875,000	425
1926	210,000	81,900,000	390
1927	390,000	136,500,000	350
1928	560,000	190,400,000	340
1929	840,000	273,000,000	325
1930	850,000	243,100,000	286
1931	965,000	236,425,000	245

These figures are quoted from ELECTRIC REFRIGERATION NEWS of Feb. 17, 1932. According to the same authority there are now in use 3,500,000 electric refrigerators which as compared with the number of wired homes in the country (20,441,249) indicates a market saturation of only 17.12 per cent. From the average unit prices above cited, it is apparent that the industry has struggled to increase volume of constant reduction of retail prices, a process which is more apparent in the current year than at any other time.

It is also apparent that annual volume did not start to increase at a rapid rate until 1925. It will be noted further that while unit volume has increased during 1930 and 1931, total dollar volume reached a peak in 1929 and has diminished in both succeeding years.

Enormous sums of money have been spent in the industry for technical development, sales promotion and advertising. Many manufacturers, unable to survive the initial struggles that characterize the early years of any new industry, have failed. Others have not yet replaced with profits the losses and initial expenses in which they have been involved.

We believe that the industry can grow and prosper only if it is not burdened by discriminatory taxes.

(Exhibit "B" is a photostatic reproduction of the statistics above given as shown in Electric Refrigeration News of Feb. 17, 1932, and there is added a chart showing the average unit price from year to year.)

Not Profitable to Investors

(c) The industry has not been generally profitable to investors.

While considerable sums of money have been set in motion by the activities of the industry, the courageous investors who have seen fit to finance the industry have profited in far less degree than the army of employes whose wages have been paid by the industry.

Examination of the financial history of the companies here represented would disclose an average record of extremely heavy initial expense and losses with very meager earnings available for dividends.

It is believed that if one were to take into account the monies lost in unsuccessful companies, and if one could develop a combined profit and loss statement for all the companies that have engaged in this industry from the beginning of its activities until the present, a very substantial loss would be indicated.

Examination of the profit and loss positions of the several companies engaged in manufacturing and selling mechanical refrigerators during the year 1931 indicates that despite the volume attained in that year, many companies suffered heavy losses. Several of the companies which showed a profit have not yet replaced by profits the losses of earlier years, and dividends have been conspicuous by their absence.

Moderate Income Market

(d) The present and future market for mechanical household refrigerators lies largely among families of moderate incomes.

The statistics first cited indicate that the market is 17.12 per cent saturated. It seems reasonable to assume that the first buyers of a new device, particularly during the period when average unit prices are high, will be the wealthy families.

According to investigations made by the National bureau of Economic Research only 13.5 per cent of the personal incomes in the United States exceed $2,000 annually. It would, therefore, appear that future buyers of mechanical refrigerators must be people of moderate incomes.

The experience of companies here represented in selling refrigerators to owners of and receivers for apartment houses indicates conclusively that apartments commanding very low rental figures remain vacant if they are not equipped with mechanical refrigeration.

The Starch report, based upon an analysis of 1,057 families in cities of various sizes ranging from Greenville, Tex., to Philadelphia, Boston, San Francisco, was made to determine what a representative cross-section of the American public "intends to buy next" in connection with types of goods used by the entire family.

Twenty-eight per cent of the families interviewed indicated that they next intended to by electric refrigerators. Incomes among these people fall into the following classifications:

Under $1,000	3.9 per cent
$1,000 to $2,000	26.9 per cent
$2,000 to $3,000	37.0 per cent
$3,000 to $5.000	26.2 per cent
$5,000 to $10,000	5.2 per cent
Over $10,000	.8 per cent

The average income being $2,519.

It is believed that any study that might be made to indicate the income of families who will buy mechanical refrigerators during the next several years would indicate conclusively that they will be families of moderate incomes. It is apparent, therefore, that the burden of the tax must fall not upon the wealthy few but upon the multitude of American families whose incomes are small.

(Exhibit "C" is a reproduction of excerpts from the Starch report referred to.)

Would Curtail Sales Volume

(e) The proposed tax probably will curtail sales volume by increasing consumer cost.

In order that the market might be expanded, manufacturers have struggled to reduce retail prices of refrigerators even though unit profits have been greatly reduced.

Inasmuch as the increase in volume of the refrigeration industry has been attained largely by means of constant reductions in retail prices, it follows that any tax which increases the cost to the consumer will curtail volume.

This is not wholly a matter of economics. It is believed that the psychological effect of stigmatizing refrigerators in the minds of the public as luxuries will have a serious and far-reaching effect upon sales.

Refrigeration Protects Health

(f) Mechanical refrigeration, far from being a luxury, is an instrument of health preservation and of thrift.

It is estimated that 70 per cent of the foodstuffs sold in the United States are perishable. Perishable foods become dangerous with the growth of bacteria. The national loss caused by the shrinkage of perishable foods amounts to hundreds of millions of dollars annually. Any mechanism that tends to reduce this tremendous loss must contribute greatly to national welfare.

The most practical means for preventing or minimizing the growth of bacteria in the home is the storage of these foods under constant low temperatures. The growth of bacteria at temperatures above 50 degrees Fahrenheit is extremely rapid. The consumption of food of dangerously high bacterial count frequently results in illness and sometimes in death. Faulty preservation of milk is known to be conducive to high infant mortality.

Dr. Royal S. Copeland, senator from the state of New York, well known as an authority on public health, has said on this subject, "Milk must be kept at a low temperature (50 degrees Fahrenheit or below) from the time it is produced until it is consumed, if its quality is to be maintained. The only safe way is to have at your disposal some method of artificial refrigeration." He adds, "hundreds of thousands of persons in this country suffer the evil consequences of improper refrigeration."

Food preservation has been man's greatest problem from the very first pages of history. In ancient Rome, the legionnaires received part of their pay in salt, because it had been found that salt helped to preserve meats. The ancient Egyptians worshipped their sun-god Ra because his rays dried their foods and helped to preserve them.

Christopher Columbus discovered this continent accidentally while searching for a new route to the East Indies—the source of spices, which were needed to disguise the bad flavor in foods of the medieval world. Lord Francis Bacon died of pneumonia contracted while stuffing a fowl with snow to see if cold would preserve it.

Francois Appert discovered canning after Napoleon had offered 12,000 francs to anyone who could find some way of preserving the French army's rations. During the Civil War in this country an ice-making machine was run through the blockade to help save the starving population of New Orleans.

Throughout history there has been this universal, never-ending struggle to protect the foodstuffs of mankind. Without pure foods, human resistance runs low; with unhealthy, poorly fed people, the progress of the state is threatened.

During the last 20 years this nation has far out-distanced the rest of the world in the care taken with its foodstuffs. Two decades ago, before milk was properly handled and refrigerated, cholera infantum caused a very high death rate among babies.

Thousands of them were poisoned during a single summer by the only food their delicate bodies could assimilate.

Among the poor, this disease was particularly prevalent. Even the middle-class families and the rich were powerless to combat this dreaded sickness.

Many an old-time physician still tells, with tears in his eyes, how he watched life slowly depart from helpless infants. Throughout long nights he has sat beside the tiny crib as the feverish baby cried faintly in the grasp of this weakening disease. He could do nothing; polluted milk, carelessly handled in the home, was too great a handicap.

Not alone are children attacked by food poisoning. Adults, too, give way to the ravages of that invisible army which populates the foods we eat. These molds and bacteria derive their sustenance from the same types of food we consume. And they cast off a waste, which, if swallowed in sufficient quantities, will poison our systems.

As many as 950 per hundred thousand of population have died from food poisoning in one year, according to the United States Bureau of the Census reports. Epidemics arising from the same source have struck entire countries from time to time.

Ten thousand cases of sore throat caused by impure milk swept over Chicago, 1,500 cases of typhoid caused by oysters were reported during one season in various parts of the United States. Milk caused 4,755 cases of typhoid in Montreal.

Improperly protected foods have caused, and are still causing, infantile paralysis, undulant fever, summer diarrhea, paratyphoid fever, tapeworm, trichinosis, foot and mouth disease, typhoid fever, dysentery, tuberculosis, septic sore throat, scarlet fever, and diphtheria.

Since 1923, the death rate from food poisoning has been decreasing. The last report shows it reduced to 750 deaths per hundred thousand.

Federal and state inspection of foods, coupled with enforcement of the Pure Food and Drug Act have helped mightily in this work. Unscrupulous food dealers no longer feel free to endanger the health of their customers by purveying poisonous foods.

The government has spent millions to protect the health of its people. This investment has been wisely made because the strength of the nation depends upon the physical well-being of its people.

Enforced protection of foods, though, stops when these edibles leave the merchant's store. No laws can assure the proper preservation of foods after they reach the home.

If left at room temperature, or in a refrigerator which cannot maintain a temperature continually below 50 degrees, these foods become an incubator for harmful micro-organisms.

The United States Department of Agriculture, Bureau of Home Economics, has warned:

"Milk, fresh meat, poultry and fish, and many fresh fruits and vegetables, should be kept at a temperature of 50 degrees Fahrenheit, or preferably lower, to check the growth of microbes that cause souring and decay."

The mechanical refrigeration industry has spent tens of millions of dollars in repeating this vital fact over and over again. In effect, this industry

(*Concluded on Page 17, Column 1*)

PRESENTING

the Kelvinator Dealer's NEW PROFIT PRODUCER!

THE finest line of Domestic Cabinets in the industry and the widest range of perfected and proven commercial installations are two sources of profit for Kelvinator dealers. Another, of almost equal potential, is the beautiful new line of Water Coolers, admittedly the most outstanding line on the market to-day.

These new Coolers are first of all beautiful—dignified—styled for the most lavishly appointed office but, at the same time, in keeping with the most conservative.

Comparable with their beauty is their inherent ability *to perform.* They are powerful, but so quiet you cannot hear them. Built like a bridge, all steel, spot-welded, scientifically braced, they are good for years and years of satisfactory service. Many things have been done to make them the finest line of Water Coolers built.

With this great New Line, Kelvinator dealers have *another* rich source of profit—another *Leader Line* with which they can straighten out the sales curve, keep their men *profitably busy,* and greatly increase both volume and profit throughout the year.

Details about the New Water Coolers and about the Kelvinator Full-Profit Sales Agreement will be sent to responsible merchants. Wire or write to-day.

KELVINATOR CORPORATION

14245 Plymouth Road, Detroit, Michigan. Kelvinator of Canada, Ltd., London, Ontario. Kelvinator Limited, London, England.

• • •

The New Line includes both Pressure and Bottle Types and heavy duty commercial units for all kinds of water cooling installations.

SINCE 1914

Kelvinator

(530)

LITTLE STORIES OF INTERESTING PEOPLE IN THE REFRIGERATION INDUSTRY

THE EXPANSION VALVE

LITTLE STORIES OF INTERESTING IDEAS IN THE REFRIGERATION INDUSTRY

By George F. Taubeneck

Big Doings, Big Business

In New York City last Thursday there were big doings. L. G. Lindsay, Mayflower's vice president in charge of sales, gathered together there his distributors of the Atlantic seaboard region from Portland, Me., to Richmond, Va.

Factory policies, merchandising plans, discounts, advertising, and all the things distributors usually discuss when they get together were on the docket for this meeting.

We needn't mention that there was entertainment.

This was the biggest meeting of its kind ever held by the Trupar Mfg. Co. Mr. Lindsay, who sees a job through whenever he undertakes it, was justly proud of the result of his planning.

Proud also was Mr. Lindsay when he was able to announce that Mayflower orders received during March were almost 400 per cent greater than orders received during March, 1931; and that January and February business was practically double that of those two months in 1931.

* * *

Mr. Hunt Reminisces

Another proud and happy man there was H. J. Hunt, the modest Trupar president, who has nursed along a small business which he started himself until today it has attained sufficient size and standing to enable him to put his feet under the same table with the chief executives of General Electric, Westinghouse, Frigidaire, Kelvinator, Copeland, Servel, Norge, and other big refrigeration concerns.

And at that table of these industry leaders Mr. Hunt has occupied a unique position: He owns a goodly portion of his company. Most refrigeration executives work on a salary, and prepare reports for stockholders.

On such occasions Mr. Hunt is wont to reminisce. The ideas on which the Mayflower business was built were based on one fundamental assumption: In order to survive in this industry of giants, it would be necessary to do things differently. And when he reminisces about these different "ideas," he tells the story in words something like these:

"When we started out in the refrigeration business, our trade name was very little known, and the problem of breaking down dealer resistance on a scale sufficiently large as to be profitable looked like a long, hard, costly job.

"Practically all refrigeration manufacturers at that time sold through exclusive distributors with comparatively small territorial assignments.

"In the face of a great deal of advice to the contrary, we decided to market our refrigerators through wholesalers in the plumbing, hardware, automotive and kindred fields.

"These large wholesalers had strong dealer and consumer influence in their territories. We could benefit by their prestige, and their credit responsibilities were excellent.

"At first we didn't attempt to set up any territorial limits. The distributors could sell anywhere, and consequently they made practically no effort to franchise dealers, but sold to any dealer whom they believed would make a good retail outlet.

"We soon found out, however, that far greater results could be obtained by drawing definite territorial lines for each distributor, and by building a sales program based on establishing franchised dealers who were specialty merchants.

"One of the most unusual policies we have pursued is our strong preference for our dealers to handle other specialty lines of merchandise in addition to Mayflower, as against the general practice of promoting exclusive dealerships whereby the dealers sell nothing but refrigeration.

"All retail selling of Mayflower electric refrigeration is done by the dealers, instead of by both distributors and dealers. The distributors, however, maintain large specialty organizations for dealer contact work.

"Contrary to another general dictum that the electric refrigerator should be sold only by intensive specialty selling methods, we operate through both classes of outlets. The method of sales operation is entirely up to the dealer.

"Either one, if worked properly, is good. Some of our largest and most successful dealers are department stores.

"We have always placed an emphasis on insuring a real profit for the dealer. That the dealer must make money is of first importance.

"It is also important that we make money; and our decisions are influenced largely by the answer to the question: 'Will it be profitable?'"

"We have been careful not to overextend our operations, not to let the business get out of hand. And today we not only have a larger business than we had ever expected, but we still own it!"

* * *

Mayflower Associates

That "we" which Mr. Hunt uses so often refers to Mr. Lindsay, the sales chief who backs strong convictions with aggressive leadership; W. M. Myers, the only man in captivity who is both treasurer and advertising manager of the same company (he also answers to the title of "merchandising manager"); and F. C. Geiler, vice president in charge of engineering and manufacturing.

This man Geiler has a history. Long before Messrs. Hunt, Lindsay, and Myers saw the possibilities in electric refrigerators, Mr. Geiler was a refrigeration engineer.

During the early years of his experimentation with heat-bailing machines he installed (at Springfield, Ohio) the first apartment house multiple system on record.

He is said to have introduced the temperature control, and forced draft air cooling of a spirally wound condenser.

In a small tinker-shop back in 1920 he made a compressor which was the progenitor of the present Mayflower line. He built and sold this refrigerating machine (and more like it) under the name "Everite."

Came then Mr. Hunt, Trupar, Mayflower, and pressure to increase production again and again. He is still as calm and serene and unpretentious as he was in the days of the tinker-shop.

Trained in the Old Country school, Mr. Geiler still looks across the sea. He imports Russian mineral oil from Hamburg, Germany; and he buys steel for disc valves from a little-known manufacturer in Sweden. And, as we have mentioned previously in this kolyum, he is a grand opera "fan."

His hours are 7 a. m. to 7 p. m.—and sometimes later.

* * *

Export Business

In his presentation to the Atlantic seaboard distributors of the theme that Mayflower has "arrived" and is on the "big-time circuit," Mr. Lindsay pointed to the export business which has been built up within the last year or so.

Since last June, Mayflower distributors have been appointed in England, Ireland, Scotland, Wales, France, Belgium, Switzerland, Spain, Finland, Tunis, Venezuela, Paraguay, and the Argentine, he declared.

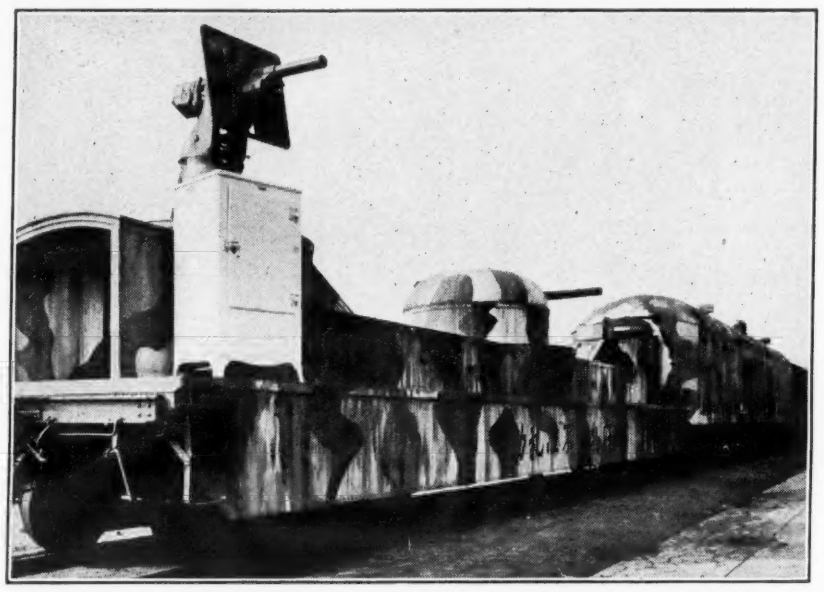
Export business is handled directly from the factory, on a strictly cash basis.

Gleefully Mr. Lindsay told the story of a farmer in New Zealand who saw a Mayflower advertisement in the *Saturday Evening Post* (Mr. Parlin please note) and sent a check to Dayton for the largest model in the line.

Lest anyone fear that some of the above remarks might indicate that there are signs of self-satisfaction on the part of the Mayflower executives, we hasten to observe that their ambitions are keeping pace with the growth of the company. And the ambitions of Mr. Lindsay for Mayflower may be said to be running a little ahead!

* * *

Mayflower Rides 'Shanghai Express'



While "Shanghai Express" was being filmed in Hollywood, Bill Seroy, Mayflower representative, placed a refrigerator on the camouflaged train.

George Bright and Elizabeth

A short time ago we dropped in on a convention of the Michigan Association of Ice Industries. For one thing, we wanted to know what an ice man looks like these days. Answer: He looks satisfied and prosperous.

We cannot recall ever having seen a group of men who more nearly resembled the "big butter and egg man" pattern than these representatives of an industry which supposedly has its back to the wall.

They were well fed, well groomed, well tailored. Losing business? Not so's you could notice it. Worried? Nope. Making ice is apparently a prosperous business, and one with a future.

Chief reason for our visit was the fact that George Bright and his daughter, Elizabeth, were scheduled to put on their air conditioning skit.

This act has been on a number of refrigeration convention platforms in various parts of the country, and is reputed to be the best part of the program. That was true in this case.

Mr. Bright, a former president of the A.S.R.E., assumes the part of a salesman of air conditioning equipment and explains the theory and practice of air conditioning to his daughter, who takes the role of a beauty shop operator.

Miss Bright, a sophisticated product of the modern finishing school, asked her father some pertinent and intelligent questions. The answers were as comprehensive and enlightening as they were clear and simple.

"Comfort cooling" is the apt term which Mr. Bright applies to the process of manufacturing weather for the home.

This process, he defines, "consists of reducing the temperature or humidity of air used by human beings within an enclosure, with relation to the outside climatic condition."

The basic principles of "comfort cooling" are:

(1) Air movement or circulation.
(2) Lowering the temperature by cooling.
(3) Reduction of humidity by dehumidification.

Equipment needed includes:

(1) Mechanical means for circulating air.
(2) Heating and cooling apparatus with controls.
(3) Dehumidifying equipment.
(4) Air cleansing apparatus.

Simple, isn't it?

* * *

Three Generations

In Chicago the other day we ran into an interesting study in contrasts. The characters for the study were furnished by V. A. Wallin, chairman of the board of the American Hair and Felt Corp., Harvey Lindsay, president of the Dry-Zero Corp. (an American Hair and Felt subsidiary), and Raymond Ring, Dry-Zero merchandising and advertising executive.

Mr. Ring is young, aggressive, sure of himself, an eloquent and convincing conversationalist, and an avowed representative of the new order of things.

Mr. Lindsay is older, also a man of convictions and also persuasive, but of a more philosophical turn of mind.

Mr. Wallin is still another jump in age and experience. His convictions are even more tempered by accumulated knowledge, and he is prone to ask questions rather than to sell an idea.

Running the gamut from sharp brilliance to mellow wisdom, this trio of executives is as stimulating a group as you will run across in many a day's travel.

Exemplary are they, or at least suggestive, of three generations.

* * *

No Sell the Wife

Down in St. Louis, we are reliably informed, refrigeration men are having great sport with Arthur E. Schanuel, vice president of the Hart Vance Co. (advertising agency) and director of the active Electric Refrigeration Bureau of St. Louis.

According to our informants (who discreetly wish to remain anonymous for the moment) Mr. Schanuel has helped sell dozens of electric refrigerators, but can't sell one to his own wife!

Mrs. Schanuel is having an enormously good time outwitting all her husband's friends, and is so taken with her title of Champion Sales Resister of St. Louis that she vows she will do without adequate refrigeration so long as there is a single remaining quota to be made.

In Sunny California

R. J. Lawrence, recently appointed California representative for Mayflower, and his wife are shown in front of their new Western home.

Colin G. Jameson

Speaking of an Electric Refrigeration Bureau reminds us that the most pleasant and best humored letters we get are from Colin G. Jameson, a young Princeton (or is it Yale?) man who works for Lord & Thomas and Logan and gets out publicity for Electric Refrigeration Bureau headquarters.

Mr. Jameson has a talent which many a publicity man could covet. He accompanies the stories he sends in with such delightful letters that his stuff is always opened and read immediately upon arrival. After chuckling over the letter, one is in a highly receptive mood, and is prone to look upon his contributions with great favor. We have printed everything he has ever sent us.

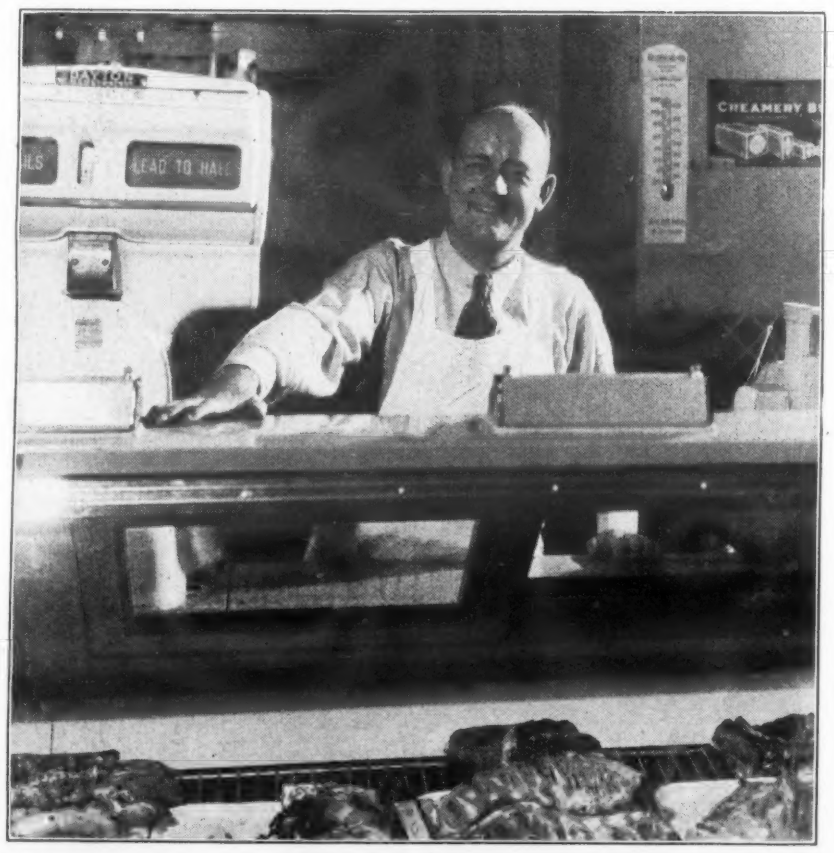
Practically all of this department's relationship with the Electric Refrigeration Bureau may be said to be a personal relationship with Colin Jameson.

True, we bump into Doc Allison now and then in a railroad station, but he is always just going somewhere or just getting back.

Last fall when we were trying to find out what the bureau was doing, we were forward passed (and sometimes not gently) around N.E.L.A. headquarters and the Lord & Thomas and Logan office until we finally landed in the hands of Mr. Jameson.

And that was just dandy. He gave us what we wanted, agreed to a news-transmitting procedure, and then began writing us letters. And we repeat, gentlemen, that those letters are gems.

Gets Behind the Counter



John Saum, Mayflower representative, helps a meat dealer during a busy time by getting behind the counter. This help sold a commercial job.

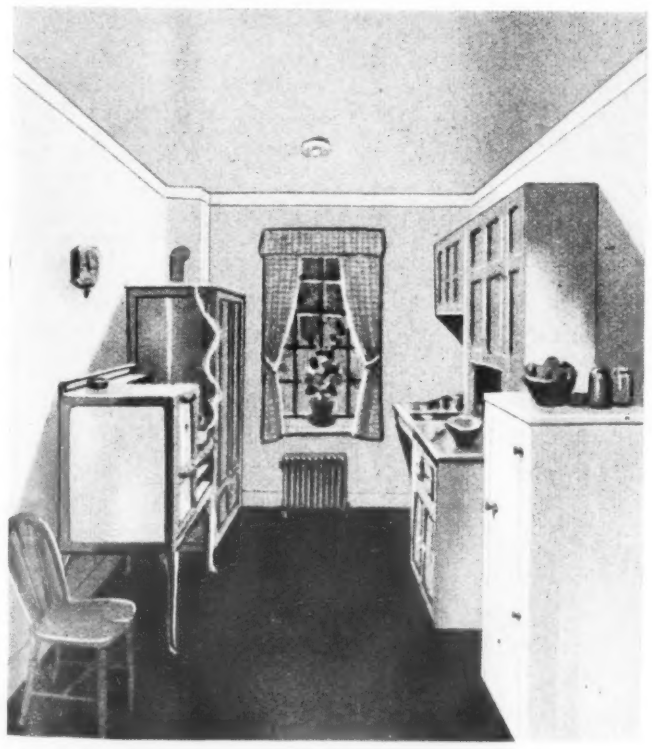
PRUDENTIAL

insures

Long Life

Refrigeration

Edmund C. Stout, Architect
Robert A. Howie, Jr., General Contractor



CABINETS BY

Seeger

SAINT PAUL

When the Prudential Insurance Company considered Refrigeration for their Model Housing Enterprise at Newark, N. J., they found that for durability, economy of operation and general excellence of Food Preservation, Cabinets by Seeger, assured the greatest value.

The Chellis Austin Apartments--comprising 406 apartments--are equipped with Modern Electrical Refrigeration, Frigidaire in Cabinets by Seeger.

This largest of recent installations was secured by the New York Branch of the Seeger Refrigerator Company.

SEEGER REFRIGERATOR COMPANY

SAINT PAUL, MINNESOTA

232 Fourth Avenue
Fourth Ave. at 19th St.
NEW YORK, N. Y.

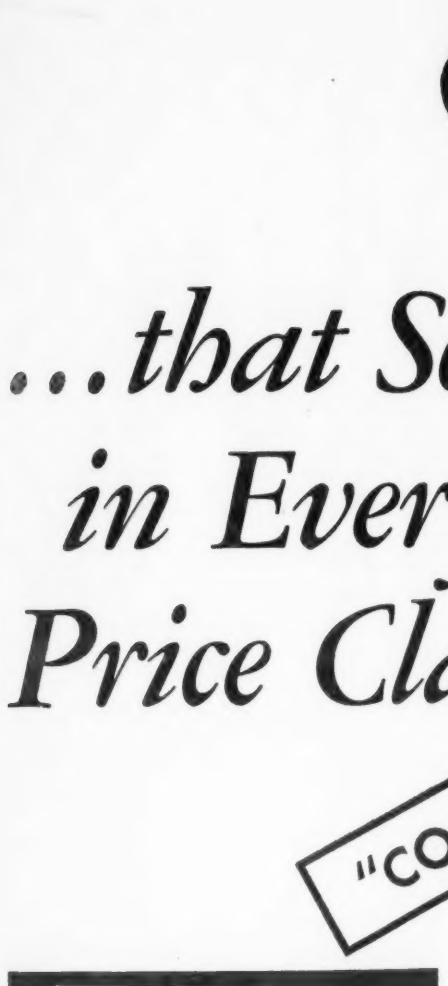
644 Beacon Street
Kenmore Square
BOSTON, MASS.

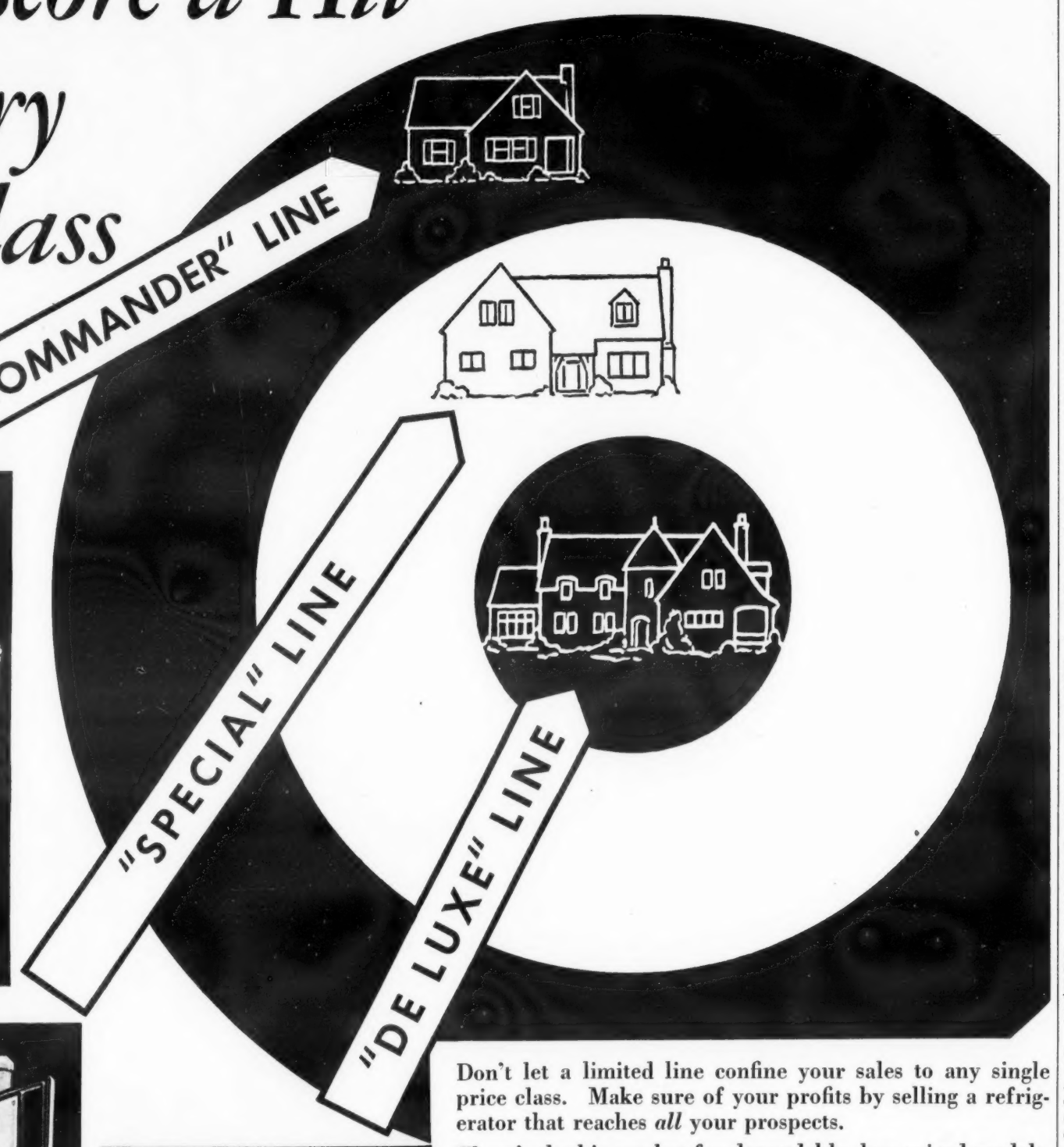
655-57 So. LaBrea Ave.
LOS ANGELES, CAL.

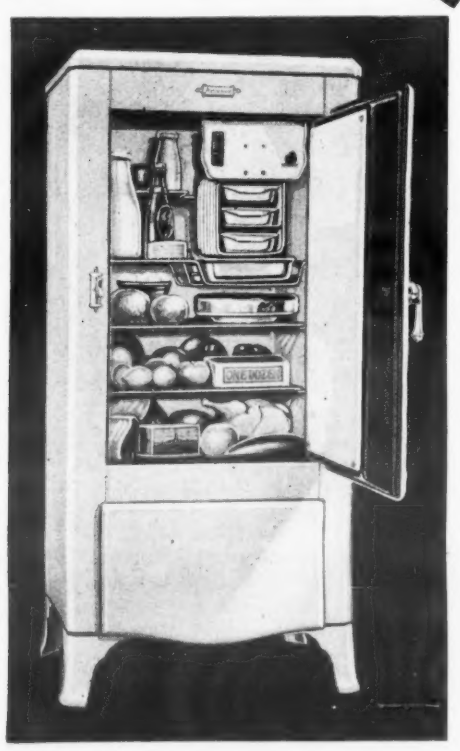
666 North Wabash
CHICAGO, ILL.

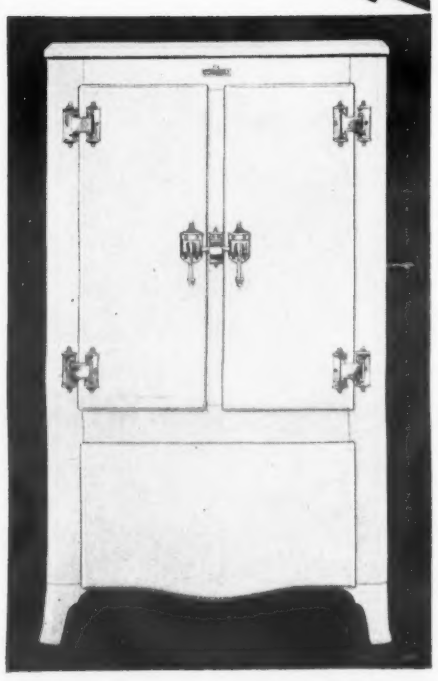
3 fast-selling MAYFLOWER Household Lines

...that Score a Hit in Every Price Class









Don't let a limited line confine your sales to any single price class. Make sure of your profits by selling a refrigerator that reaches *all* your prospects.

There's the big market for dependable, low priced models. Mayflower lets you in on the ground floor with a quality refrigerator priced to sell at only $129.50 at the factory.

Here's the *lowest price* offered today by a long established refrigerator manufacturer. And better still, there's a real profit for you on the low priced models. Isn't this something to think about?

Next come the special models . . . introduced to enable you to offer Mayflower's *exclusive period* style design at *competitive prices.* A big national advertising campaign is telling your customers, right *now,* all about this new beauty treatment for electric refrigeration.

To round out the Mayflower set up, there's a complete line of Mayflower standard models . . . the finest refrigerators possible to build . . . to meet the needs of those who demand only the best.

Get the facts about Mayflower today. Begin now to profit from a *complete* coverage of the refrigeration market. Write today.

15 MODELS...FROM $129.50 TO $375.00 at the factory

MAYFLOWER
ELECTRIC REFRIGERATION

EASTERN MAYFLOWER DISTRIBUTORS MEET

(*Concluded from Page 1, Column 1*)

for Mayflower dealers in Philadelphia, according to Mr. Ellis. His dealers swear by the scheme, he declares, and attend almost in a body.

Frederick Raff of the company bearing his name, Hartford, Conn., told of his sales organization, which he believes in keeping small, active, and permanent —making it possible for real dealer earnings.

H. J. Hunt, president of the Trupar Mfg. Co., told the distributors that although Mayflower production facilities were doubled during the winter to provide for the foreseen demand, already "production facilities are strained," and the factory is behind in orders.

L. G. Lindsay, vice president of Trupar, was chairman of the meeting. He declared that the two Mayflower babies, the $129.50 and $149.50 models (which were announced 60 days ago) were finding their marks in the markets at which they were aimed.

W. M. Myers, treasurer, took the distributors behind scenes in sales promotion and advertising activities, analyzing the various media being used this spring.

A discussion of dealer attitude and of the growth of commercial refrigeration acceptance in the East concluded the session.

Others attending the meeting were: J. P. Fell, Jr., and Mr. Barnum, Aird-Don Co., Troy, N. Y.; W. F. Schiener and Robert McCann, W. A. Case Co., New Rochelle, N. Y.; Earl Lesher, Newburgh, N. Y.; Herman Holman, Patchologue, N. Y.; J. W. McLean and Mr. Wimple, Edwards & Walker Co., Portland, Me.

Abe Pent, Samuel S. Glauber Co., New York City; L. C. May and H. E. Young of F. P. May Hardware Co., Washington, D. C.; William Haddon and A. H. Bates, Newark Distributors, Newark; E. Hughes, Philadelphia Distributors; C. R. Watkins, Watkins-Cottrell Co., Richmond, Va.

Members of the Mayflower field organization present included C. H. Grandstaff, G. L. Richardson, J. R. Tepfer, W. J. Mundhenk, H. S. Rheiner, and J. P. Porter.

MERRIAM LEADS FORCES IN G. E. WAR OFFENSIVE

(*Concluded from Page 1, Column 2*)

of the Field Armies of the Southwestern Front as a result of sales gains in his territory.

Georgia Power Co., Atlanta outlet for W. D. Alexander, distributor, will open its part of the war campaign April 25. The Idaho Power Co. and Central Maine Power Co. have both entered the fighting zone.

Pennsylvania Power & Light Co. began its campaign April 4, following a series of meetings in Bethlehem, Allentown, Hazelton, Wilkes-Barre, Sunbury, Williamsport, Pottsville, Harrisburg, and Lancaster.

One of the outstanding accomplishments of the war campaign to date was the march of the N. K. Ovalle Field Army 128 miles into enemy territory in one week, an achievement without precedent in any campaign thus far, according to General Electric headquarters.

JACQUELINE FROST NAMED GIBSON HOME ECONOMIST

GREENVILLE, Mich.—Miss Jacqueline Frost, for eight years a writer on food subjects in national magazines, has been appointed director of the newly established home economics department of the Gibson Electric Refrigerator Co., according to W. R. Marshall, sales promotion manager.

Miss Frost's articles have appeared in *American Cookery, American Food Journal, American Home, Food and Health Education,* and she is the author of a syndicated series of newspaper articles.

She is the author of recipe booklets which have been put out for Universal Cooler and Mayflower refrigerators. She maintains her own test kitchen.

KELVINATOR PURCHASES OIL BURNER FIRM

(*Concluded from Page 1, Column 4*)

with Rightway burners since the foundation of the Maise firm a year and a half ago.

J. F. Donnelly, who has been appointed manager of the oil burner division of the New York factory branch, has been associated with Kelvinator for some time in a study of the oil burner business in the New York area. Before joining Kelvinator he was with the Silent Automatic Co. He has been in the oil burner field since 1919.

Sufficient stock of the oil burner line is available to tide over until such time as Kelvinator can complete its manufacturing plans, according to the statement.

MAYFLOWER EXPANDS COAST ORGANIZATION

OAKLAND, Calif.—That all dealers who tried out Mayflower refrigerator merchandising last year are continuing the line this year on the Pacific Coast is announced by William J. Seroy, Pacific Coast representative of the Trupar Mfg. Co.

Kieruff & Ravenscroft has become Mayflower distributor exclusively in northern California, and reports changes in its organization. Henry Wolfe is in charge of sales in the San Francisco Bay area; Fred Prentice has charge of operations in the Sacramento valley territory, and Robert Levy directs San Joaquin valley sales.

Tom Tobin, new sales manager for the firm in the southern part of California, has been holding dealer meetings, and has increased the organization in his part of the territory.

In Denver, the Knight Campbell Music Co. received two carloads for "samples," and sent in a reorder for 10 additional carloads.

In Reno, the Nevada Auto Supply Co. has a first carload, and reports good dealer acceptance.

GIBSON DEALERS RECEIVE SPECIAL RECIPE GUIDES

GREENVILLE, Mich.—A "lifetime" recipe guide, for the use of dealers in keeping contact with their customers, has been developed by Miss Jacqueline Frost, Gibson home economist. The file of recipes is to be given to each Gibson owner at the time her refrigerator is delivered.

The recipe guide is a durable file which initially contained about 12 cards with basic recipes. On the fifteenth of every month, two new cards will be supplied the dealers, who will distribute them to the Gibson users in their territories.

By means of this system, salesmen will be enabled to call on their users and get prospect material from them about once a month.

The box is designed to stand upright like a book, thus taking up a minimum amount of space in the cupboard. When in use, it stands on its side like any other file.

Strong pressboard guides take care of the recipe classification under such headings as appetizers, soups, entrees, salads, party suggestions. Recipe cards are white, and plainly marked as to which part of the file they belong.

As the box is opened, the first card is a return postcard on which the owner may give four names of friends or prospective refrigerator buyers.

A colored card then shows Gibson practical food arrangement. Another colored card gives Gibson freezing technique, tips on dessert texture, and suggestions for quicker freezing.

BAGPIPE BAND ANNOUNCES GENERAL MOTORS EXHIBIT

NEW YORK CITY—A Scotch bagpipe band mounted on top of a Fifth avenue bus brought the news of the General Motors National Exhibit, and particularly the Frigidaire division of the exhibit, on April 2, according to D. R. Lawrence of the sales planning division, Frigidaire Sales Corp., here.

The bus headed a parade of 12 Frigidaire trucks, and the parade, with a police motorcycle escort, drove around the center of New York, cutting across several of the main thoroughfares such as Fifth avenue, circling around Hotel Astor, where the show was being held.

The four exhibits held in Newark, Brooklyn, Albany and New York City made possible the sale of 95 units, according to Mr. Lawrence.

HAWAII MAJESTIC DEALER SPONSORS PRIZE CONTEST

HONOLULU, Hawaii—Prizes including a Majestic radio and totalling $200 in value were awarded in a contest recently sponsored by the Johnson Radio and Music Co., Majestic refrigerator and radio dealer, here.

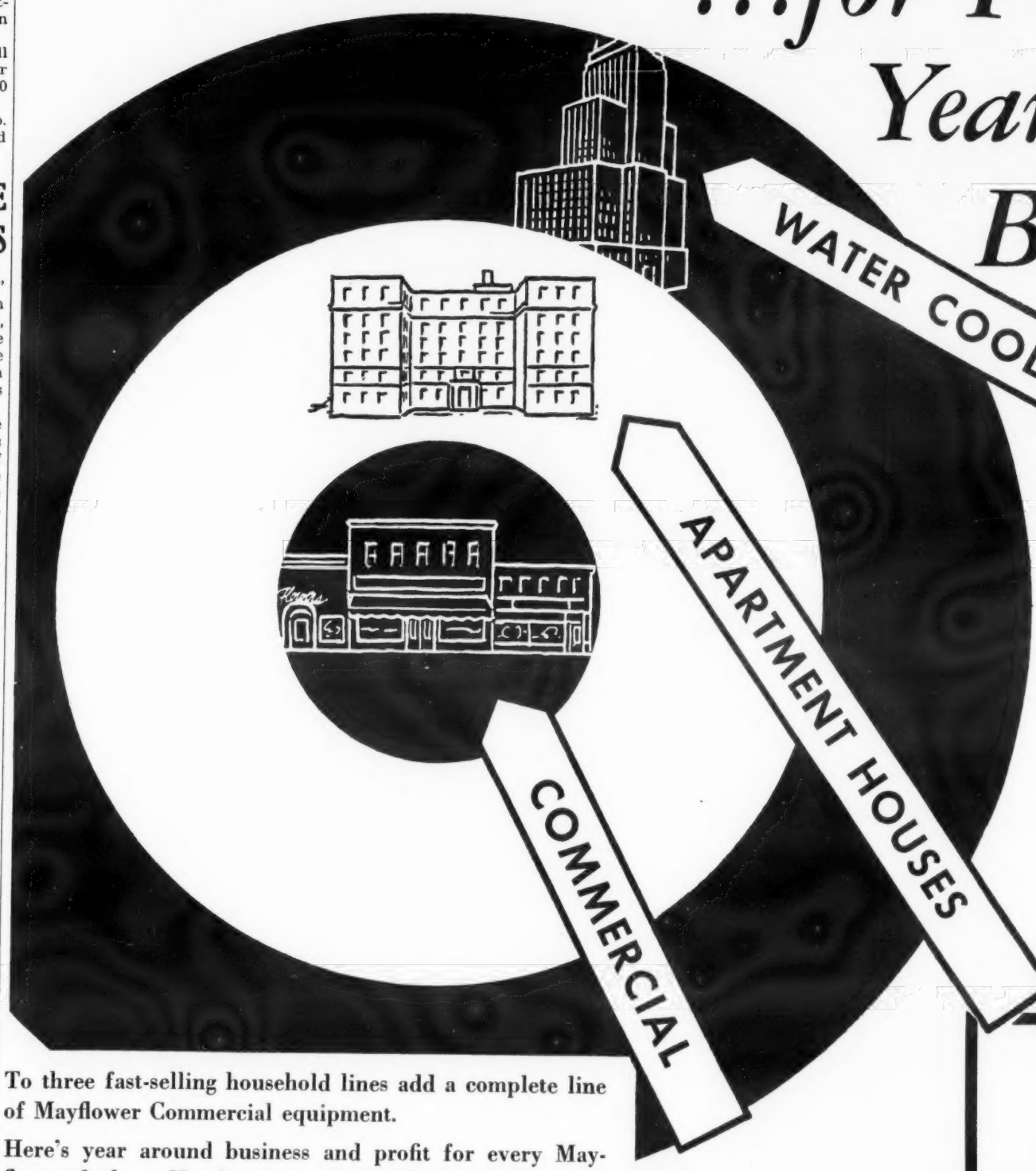
More than 2,000 responses were received to the contest offer. Newspaper announcements offered the awards to those persons arranging the following words in the most forceful manner: "To health Majestic boost happiness is products boost to."

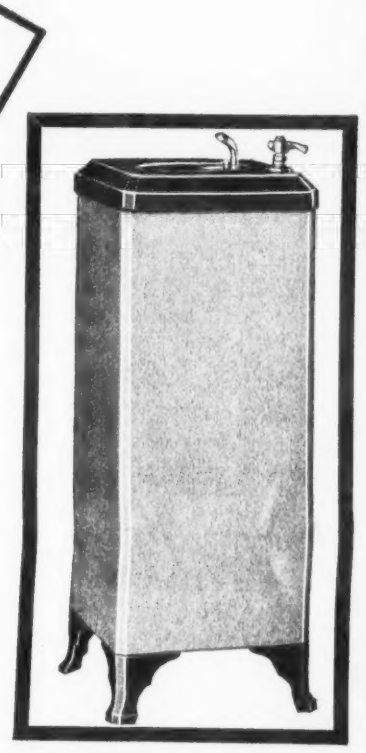
The correct arrangement, "To boost Majestic products is to boost health and happiness" was guessed by most of the contestants, although some of the answers were ludicrous.

UTILITY OFFICIALS VISIT KELVINATOR PLANT

DETROIT—Three officials of the Metropolitan Edison Co., Reading, Pa., visited the Kelvinator plant, here, recently. They included Leslie Weiss, H. A. Thomas, and B. D. Barr.

plus the complete MAYFLOWER Commercial Line ...for Profitable Year 'Round Business





To three fast-selling household lines add a complete line of Mayflower Commercial equipment.

Here's year around business and profit for every Mayflower dealer. Hotels, restaurants, clubs, groceries, meat markets, apartment houses, all need electric refrigeration.

Dairy farmers need milk cooling equipment. Office buildings need water coolers. Soda fountains need ice cream cabinets.

Mayflower offers a dependable, efficient installation . . . at the right price . . . for everyone.

Even though you represent another household line, you can still handle Mayflower Commercial Refrigeration for year 'round profit. The Mayflower line . . . complete and flexible in its application . . . comprises seventeen powerful compressors and great variety of coils for every purpose.

No refrigeration dealer can afford to overlook the ever-growing commercial market for Mayflower. Some one in your locality will profit from this opportunity. It might as well be you. Write today for all the facts.

Mayflower-Larkin large surfaced, self-defrosting coils for walk-in coolers and display cases give you many distinct sales advantages. With Mayflower there's no defrosting troubles as frost never forms. Because of this dehydration, discoloration and loss of weight is a thing of the past. Tell this story to grocers and butchers and you get an attentive hearing.

TRUPAR MFG. CO., DAYTON, OHIO

CANADIAN FACTORY: MAYFLOWER CORP. OF CANADA, LTD HAMILTON, ONTARIO. PRICES SLIGHTLY HIGHER IN CANADA.

MAYFLOWER
ELECTRIC REFRIGERATION

MERCHANDISING SECTION ELECTRIC REFRIGERATION NEWS

The Business Newspaper of the Refrigeration Industry

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Editorial Aims of the News

To encourage the development of the art.

To promote ethical practices in the business.

To foster friendly relations throughout the industry.

To provide a clearing house for new methods and ideas.

To broadcast the technical, commercial and personal news of the field.

Lower Prices

WHEN making the point that the market for household electric refrigerators is only 17 per cent saturated, the fact should not be overlooked that the relative saturation of the higher income groups among the 20,441,249 wired homes which comprise the present market is undoubtedly much greater than 17 per cent.

A market of this nature roughly resembles a pyramid; and invasion of such a market is something like cutting successive slices off this pyramid—the farther down the cut, the larger the slice. When electric refrigerators sold for an average retail price of $600, it was a frock-coat-and-boutonniere business; the market was comparatively small. With the passing of each year the average retail price of electric refrigerators has dropped a little further, the market has been enlarged in consequence, and the industry has actively gone about the job of pushing saturation of each new income level it reaches.

A big percentage of the families in these 20-million-plus wired homes lives on earnings below the income tax limits. After they have paid the rent, purchased food, bought clothing, stalled off the doctor, and educated their children, these families do not have very many dollars left. The competition for these few extra dollars is unusually keen. Salesmen of electric refrigerators must contend with salesmen of other home appliances, with the urge to get a new car, with the movies, with the attractive bargains being advertised by mercantile establishments. And these salesmen declare that when the decision is made as to which group will get the few extra dollars each month, the question of price is a major factor.

Influenced by these reports from men in the field, most manufacturers of household electric refrigerators have reduced prices considerably within the recent weeks. In some cases new low-priced lines have been brought out; other manufacturers have simply taken sizeable cuts out of the list prices on their regular models. It seems to be rather generally accepted that the bulk of electric refrigerator sales must be made this year to families of moderate circumstances and limited means. and prices are being adjusted accordingly.

Depression Boxes

Price reductions on electric refrigerators can be accomplished in a number of different ways. There are, for instance, the "depression boxes." These are assembled jobs on which the manufacturers have been able to place very low prices because of highly advantageous contracts they have negotiated with suppliers. Most makers of refrigeration parts and supplies are also identified with the automotive industry and other fields which are hard hit. These suppliers can sometimes be persuaded to furnish refrigeration parts at almost cost-minus prices in order to keep their plants going and retain some of their men. These parts are then assembled into electric refrigerators, sold through department stores (usually under private brand names), and converted into profits for the men who drove the bargains. These "depression boxes" were the first of the $99.50 models. Whenever business gets a little better for their suppliers, it is probable that the assemblers can no longer hope to keep their prices so low. Their advantageous contracts can last no longer than the period of idle factories and static business.

Production Economies

Frigidaire, Kelvinator, and Majestic, all of which have announced drastic price reductions, have mammoth factories which rarely operate at capacity. The fixed charges on these large investments in plants and equipment are considerable. By bringing out low-priced lines and going after the big market among small-income groups, these manufacturers expect to take advantage of their huge production capacity, and make production economies by obtaining greatly increased volume.

Most common of the methods followed to get lower prices is that of substitution and elimination. Accessories are dropped; the refrigerator is stripped to bare essentials. Just as the automobile industry obtained low-priced models by cheapening the bodies, so the electric refrigeration industry has obtained low-priced models by cheapening the cabinets. Cheap insulation, cheap finish, cheap hardware, and absence of styling have all played their part in getting the prices down.

The Machine Must Be Right

Substitution of less costly parts for the refrigerating unit is also possible but not so easy. In most cases the low-priced models of the various manufacturers have the same refrigerating machines as their big brothers in the "de luxe" lines. (Majestic furnishes the sole exception to this rule at the present writing—its "de luxe" line has a hermetically sealed mechanism, whereas its "standard" line has an "open" unit.)

In general, the machine must be *right*, and if it isn't right, it won't work. For example, one thing which cannot be cheapened is the seal. A refrigerating machine contains a volatile refrigerant which will leak out at the slightest provocation. That refrigerant must be retained or there is sure to be trouble. The manufacture of a good seal requires both experience and quality parts. And this fact alone acts as a great deterrent to the "fly-by-night" manufacturers who would like so much to get into this fast-moving industry.

Depressions are good because they make people think. The situation that electric refrigeration now finds itself in—the necessity of finding its market among lower income groups, coupled with the fact of reduced wages—is probably good for the industry because it is making its executives think. If manufacturers can succeed in figuring out ways and means of reducing their prices without damaging the good names of their products, the success of their thinking will undoubtedly be rewarded. If other manufacturers suffer from hysteria and slash prices unjustifiably they will undoubtedly pass out. The old law of the survival of the fittest seems to be in operation today to a greater degree than it has in many years.

GLEANINGS
FROM RECENT PERIODICALS

DISCRIMINATION

Electric refrigerator manufacturers have filed what seems to us a valid protest against the new tax bill as it affects them.

A 5 per cent tax is imposed on all electric refrigerators.

No tax is imposed on non-electric refrigerators.

This is rather obvious discrimination. As one manufacturer points out, the levy will work a DIRECT HARDSHIP upon a growing industry.

Either all ice boxes should be taxed or none should be taxed. The present arrangement is a virtual subsidy and the Senate, in dealing with the tax bill, should recognize the fact.

In these days, certainly, it is fallacious to assume that the owner of an electric refrigerator is necessarily better able to bear more taxes than the owner of an ice box.—Camden, N. J., *Courier-Post*.

Code of Ethics
Sponsored By N.E.M.A. Refrigeration Division

The purpose of this procedure, which has been styled "Standard Trade Practices, Electric Refrigeration Industry," is to establish certain principles which shall be used as a guide by those manufacturers who may subscribe to same in presenting the merits of their respective types of apparatus to the public. The term "Presenting" is intended to include not only advertising in its various branches, but sales promotion work of every kind and description.

It is recognized that the development of a code such as this must necessarily be a matter involving more or less evolution. At the start it is proposed to deal with those things that appear to be the most important and constructive, with a full appreciation of the fact that changes, as well as additions and eliminations, must be developed from time to time.

General Principles

The tangible assets of an organization—cash, inventory, equipment, buildings, real estate, etc.,—are important. They are easily recognized and appreciated. This, however, is not the case where intangible assets, such as good will, are concerned. They are not so well understood, nor recognized quite as readily as the tangibles.

The good will of those on whom an institution depends for its success is the most valuable asset it can have. This applies not only to those who purchase its products, and use its services, but also to those who constitute the organization itself. These remarks are not limited to individual organizations. They apply equally as well to the industry as a unit.

The purpose of the code is to establish fully the fact that the electric refrigeration industry is an industry. All the parts thereof should recognize the importance of developing to the maximum degree, good will from the industry standpoint. The value and importance of electric refrigeration should be constantly set forth—a fact to which every unit can fully subscribe. To this should be supplemented, and perhaps more importantly dealt with than the first, the advantages of each type of apparatus as most effectively solving the problem presented. With such a method of approach it is believed that the good will of the industry and the good will of the individual members thereof, can be enhanced to the benefit of all concerned.

In establishing the importance of developing the maximum of good will for an industry, as well as the constituent members thereof, there must be a full appreciation of the fact that industrial development is facilitated by active competition when conducted within proper limitations. The purpose of this procedure is not in any sense to limit development from this or any other standpoint, but rather to accelerate development by constructive methods of appeal.

General Procedure

In setting forth as a part of this procedure certain recommendations involving certain specific matters, it is recognized that it is only possible to deal with principles. With a principle as a guide the question then arises as to whether or not any specific item is in accord with or is outside of the principle itself. In some instances the answer will be self-evident. In others it will be difficult to determine.

As before stated, through evolution additional consideration will arise from which will emanate new standards in the form of additional principles.

It is agreed that the principles herein established shall become operative as of January 22, 1932, as far as those manfacturers who have subscribed to same are concerned. It shall be the duty of each such manufacturer to readjust policies and procedures in accordance with the principles and spirit of this code, within the date designated. It shall be the duty of each manufacturer to notify by letter, in form as may be hereafter determined—such letter to be identical—that manufacturer's individual organization as well as the distributing organization, of a change in policy and an attempt to build good will for that manufacturer's own product as well as for the industry, which policy will be insisted upon and must be respected by all concerned.

In the event of an alleged or assumed violation of any part of this procedure by any party or parties thereto, and if such violation constitutes a matter which is actionable at law, or if it constitutes an unfair method of competition such as might be the subject of a complaint by the Federal Trade Commission, no action will be taken or instituted without full discussion of such alleged or assumed violations on the part of all subscribing adherents to this Code of Ethics.

Advertising

The advertising practice of an organization reflects or should reflect, to a very large extent, the type of thinking that exists within the organization. If sound and constructive and temperate in tone, it should, over a period of years, develop confidence in the soundness of the institution and the integrity of its product. If it is flamboyant, egotistical, full of superlatives and exaggeration, a reaction is bound to develop against the product and the type of thinking of the institution is not likely to be what it should be. Therefore, advertising copy is an important consideration in developing the good will of the industry, the parts thereof, and is an important factor in this code.

Advertising Defined:

The term "Advertising" as dealt with in this code is to have the broadest possible construction. It applies not only to magazine or newspaper space, but billboards of every description; radio, sales promotion activities, house organs, catalogs, direct-mail campaigns and every other type of presenting, in verbal or printed form, the merits or advantages of any particular apparatus to the consumer.

Principles To Be Recognized:

The following is to be the guide in advertising:

1. Incomplete statements or statements of a character likely to mislead, made deliberately on any point concerning any of the products advertised or any parts or features thereof, are in violation of good business practice and unethical. Statements should be complete and so made as to convey to the casual, uninformed reader the full facts.

2. There should be no statements of a negative character. For example, the advantages of a certain mechanical principle can and should be exploited to the fullest possible extent. The disadvantages of solving the problem in a different way, especially if that way be a competitive way, is recognized as unethical.

3. The manufacturer is responsible so far as this code is concerned, for the action of branches, distributors, or dealers, or whatever form the system of distribution may take.

4. Reference, either of a direct or indirect character, to the type of apparatus or policy of any competitor, in any form, is not permitted.

Sales Promotion:

The following will be the policy in connection with this subject:

1. Verbal presentations concerning the merits of any specific form of apparatus shall be confined to the specific type of apparatus under consideration. Statements relative to competitive apparatus shall be confined to the suggestion that prospect obtain any information as to such apparatus from the duly accredited dealer handling that specific type of apparatus.

2. The direct or indirect use of a competitive piece of apparatus is not permitted.

3. Care should be exercised in claiming any feature in behalf of any specific apparatus as an exclusive feature unless that feature is sufficiently broad in character to justify a claim of exclusiveness. In claiming exclusive features the advantages accruing therefrom should be clearly stated, supported by the essential facts.

4. Facts and figures pertaining to the performance of any type of apparatus shall be permissible when the complete facts are stated and are based upon a properly conducted test. The use of competitive tests under all circumstances are not allowable according to this procedure.

Service and Guarantee

The principle that the manufacturer should stand behind his particular form of apparatus by protecting the consumer against manufacturing and engineering defects and by providing the consumer, through a field organization, with adequate maintenance in the form of service, is recognized. The following principle shall apply:

Each party to this procedure shall, for the information of the others, provide them with copies of his standard form of guaranty and shall make known to them his service policy, both during and after the guarantee period, with all essential details.

Health Code

In view of the fact that there has been proposed the N. E. M. A. refrigeration code, sponsored by the Society of Refrigerating Engineers, all parties to this agreement will, as soon as said code has the approval of American Standards Association, work directly and indirectly for its universal adoption throughout the United States.

Financing

In view of the general acceptance given consumer financing, it is recognized that its use constitutes an important element in the distribution and sale of the products of the Mechanical Refrigeration Industry.

It is the opinion that the broad variance in consumer plans as administered by national, local, and privately owned finance organizations has permitted the perpetration of abuses and excessive costs upon the consumer public. So as to avoid undesirable contingencies and determine and accord recognition to sound, legitimate, reasonable cost plans, it is recommended that the signatory participants to this Code exchange information as to their financing plans and policies so that they may be studied and discussed.

'Management Vital Factor in Business Enterprises,' Merrick Writes

HUMAN values, such as enthusiastic interest, cooperation and loyalty of workers cannot be paid for in money alone," states F. A. Merrick, president, Westinghouse Elec. & Mfg. Co., writing for the Executives Service Bulletin on "Management and Corporate Character."

The corporation, like the individual, entrusts the tools of industry—capital and labor—to management, Mr. Merrick points out. Management is charged with the dual responsibility of conducting the enterprise in such manner as will protect equally the best interests of both the investors of capital and investors of labor.

"Intelligent and conscientious management develops and establishes corporate character—the most valuable asset of any business organization," Mr. Merrick declares.

While executive management usually is looked upon as something elusive, intangible—a sort of indefinable business "it," this is far from true, the Westinghouse leader points out.

"Management is easily understandable," he says. "Horse sense, hard work, a thorough knowledge of the business, are the basic components of successful business administration."

Lists Success Factors

The three major factors which have gone to make up the success of the Westinghouse Co. are listed by Mr. Merrick as follows:

1. Technical and practical engineering and manufacturing experience.
2. Sound principles of financing, production and distribution.
3. The constant development of a balanced group of young men to carry on in all branches of the company's activities.

"In addition to its primary tools already mentioned, management has still another function of critical importance—coordination of engineering, design, finance, production and distribution.

"A satisfactory product is not enough. Its plan of manufacture must be efficient, its financing must be sound economically and the product must be available in sufficient quantity to meet public demand. In short, management's job is to establish and maintain corporate balance.

Executive Like an Architect

"The position of management, as typified in the average business executive, is comparatively the same as that of an architect.

"He visions the entire organization much the same as the architect visions a building. He sees all functions in relation to one another and each function in its proper relation to the general business and economic scheme.

"Like the architect, management gets the broader vision across to each craftsman, so he will realize his own work is not a thing in itself, but a contribution to the harmony of the completed objective."

The executive works with his staff and his employes, as the architect with his craftsmen and constructors, Mr. Merrick points out in drawing his comparisons. The "chief's" vision guides and coordinates the multiple functions of an organization. The executive who so interprets his position cannot fail his economic obligation.

Explains Westinghouse Program

"The Industrial Relations program of Westinghouse is a logical development for and by the employes of the company," states Merrick.

"It is a reasonable, common sense application of altruism in the best sense of the word. It aims not to be paternalistic, philanthropic or socialistic. It definitely recognizes the duty of industry to the worker, the company and the community.

"We believe our plan operates to inculcate in the mind of the worker a sense of relationship to the entire scheme of things—to arouse in him a livelier sense of responsibility and to give him a feeling of security against the ordinary hazards of ever-changing conditions, methods and products in industry.

"It is our policy to recognize each worker as an individual even though his efforts must be merged with the efforts of others.

"The management believes in stimulating each member of the organization to function as though the plan in which he works were his own property, and by incentives, to encourage him to surpass ordinary standards of performance.

"Individual records of performance are maintained, and the management encourages its executive officers to give due credit to their subordinates, that each may be recognized and awarded, to the end that workers of capacity may be promoted.

"We believe that every employe, in addition to his salary or wage, is entitled to share financially, in some form in the prosperity of the company in which he is investing his time.

"Consequently, we have Employe Plans which form a comprehensive program for the building of sound worker-management relations, which plans have been evolved through the 40 years of the corporate life of Westinghouse."

The Westinghouse program of industrial relations includes the following plans:

1. Relief plan.
2. Savings plan.
3. Westinghouse annuity plan.
4. Group insurance plan.
5. Education and training plan.
6. Housing and building and loan plan.
7. Incentive plan.
8. Conservation of health plan.
9. Recreation and entertainment plan.
10. Miscellaneous plans.

More than 37,000 employes are covered by group insurance; 771 employes have been aided in the erection of their own homes; 991 employes, during 1930, received relief benefits due to illness or to accident while off duty; 572 employes are on the retirement roll receiving compensation; 12,000 employes have deposits in the savings fund; 607 employes are in the building and loan fund.

The fruits of a comprehensive employer-worker relations program are attested amply by the service record of Westinghouse employes.

There are, in the Westinghouse organization, 10,000 people each with over 10 years' continuous service, and more than 3,000 persons whose service record extends over a period of more than 25 years.

Off on a Mountain Picnic

The picture shows members of the Home Appliance Sales Co. of Salt Lake City on a wild and woolly picnic in the mountains.

FORM ASBURY PARK BUREAU

ASBURY PARK, N. J.—H. M. Hendrickson has been elected chairman of the newly organized Electric Refrigeration Bureau of Asbury Park. R. A. Tusting is vice chairman, and T. H. Egley, secretary.

KRESGE SELLS FRIGIDAIRE ON METER-ICE SYSTEM

NEWARK—Announcement that Frigidaires priced up to $223.50 may be had on the Meter-Ice plan has been made by the Kresge Department Store through newspaper advertising.

The advertisment features "Stephanie Whyte," who says "Buy Your Frigidaire Out of the Loose Change in Your Purse."

The advertisment goes on to say "Here's how the Meter-Ice Plan works:" and explains that there is no down payment. When the Frigidaire is installed, the meter will also be installed. Once each month the representative will call to collect the deposit and credit the money to the customer's account. When the Frigidaire is paid for, the meter is removed.

SPARTON SEEKS PERMISSION FOR TELEVISION STATION

JACKSON, Mich.—Permission to build an experimental television station, with 1,000 watt-power, has been asked by Sparks-Withington Co., manufacturer of Sparton refrigerators, radios, and automobile equipment.

Are your salesmen

UP IN THE AIR?

● *Here is the highly simplified refrigerating unit built in one rigid piece. It is hermetically sealed with the few necessary moving parts assembled in the lower portion and located in the base of the refrigerator cabinet.*

Are you wondering what to do for the rest of the year—or are you sure of getting your share of the volume from this rich market?

Men who handle the Servel Hermetic find a ready acceptance for Simplified Refrigeration. They have a product that women want—with outstanding features that simplify sales problems for themselves and their salesmen.

The Servel Hermetic is years ahead of any machine in the field. It is the simplest electric refrigerator yet produced. It requires no kitchen repairs, no intricate adjustments—and no replacement of parts. There are no moving parts exposed—and the number of moving parts has been reduced to a minimum. The machine comes in one crate—is easy to deliver—easy to install—and, with Servel's aid, is easy to sell.

Write today for the details of our 1932 Dealer Plan. Do it now—and stop wondering what to do for the rest of the year.

SERVEL SALES, Inc., Evansville, Ind.

Makers of a complete line of household and commercial refrigeration

SERVEL

HERMETIC

Simplified Refrigeration

3 LEONARD MEETINGS HELD IN TEXAS CITIES

SAN ANTONIO, Tex.—A series of three dealer meetings in various parts of Texas have recently been completed by the Peaslee-Gaulbert Corp., Leonard distributor in this state.

R. I. Petrie, sales manager; J. J. O'Neil, of the Refrigeration Discount Corp.; George B. Gray, Leonard district manager, and E. S. Bolich, of Brooke, Smith and French, Inc., were speakers at all three meetings.

The first of the series, at Dallas, was attended by 50 dealers and the entire sales organization of the Dallas Peaslee-Gaulbert branch. R. E. Peake, vice president and general manager of the distributing firm, had charge of this and the other meetings.

Here in San Antonio, three days later, 125 dealers attended a similar meeting, and the same week 100 dealers from Houston and southwest Texas attended their convention in Houston.

TAYLOR INSPECTS GROUNDS FOR CHICAGO WORLD'S FAIR

CHICAGO—A. M. Taylor, Kelvinator director of advertising, was one of a group of representatives of manufacturers who will exhibit their products at the International Exposition at Chicago in 1933, who recently inspected progress in construction.

As has been previously announced, Kelvinator has reserved a space in the electrical building for the display of its domestic and commercial lines of electric refrigeration.

Mr. Taylor reports excellent progress in construction and adds that, when completed, the buildings and their investiture for the 1933 Chicago Exposition will establish new marks for size and architectural grandeur.

How To Supervise Salesmen

As Practiced By E. H. Hodge, Detroit-Majestic Products Corp.

Salesmen are shown 'at work' in the retail store of the Detroit-Majestic Products Corp.

* * *

By Phil B. Redeker

DETROIT—Careful selection of salesmen, intelligent supervision of manpower, and the application of adequate sales promotion material are the principal activities that go with the job of a retail sales director, states E. H. Hodge, retail sales manager for the Detroit-Majestic Products Corp.

"Ninety per cent of selling lies with the character of individual salesman and the type of work that he does," Hodge believes.

That is why Hodge makes the careful selection of salesmen an all-important part of his work.

Hodge is also a great advocate of the use of human channels in uncovering prospects for the sale of refrigeration.

He has his salesmen contact users of not only Majestic refrigerators, but users of any of the other makes.

Salesmen leave recipe books or other pamphlets dealing with the use of the refrigerator in the homes of such users, thereby gaining recognition which allows them to make a later call in which a "chat" with the user will often result in this disclosure of a number of prospects.

Listen to New Story

Then there is the possibility that one of these users may have an antiquated machine, and will perhaps be willing to listen to a proposition that has to do with new and improved refrigeration.

Salesmen are also working on some 7,000 leads gleaned from a "prize ticket" name gathering stunt conducted by the Detroit-Majestic Products Corp. at the recent Detroit Builders' and Food Show.

Investigators have qualified these names with respect to the individual's ability to purchase, and these names now represent the "prospect list" upon which the retail organization is working at present. The enlarged refrigerator organization is so comparatively new that names gathered from direct canvassing, practiced stringently by the sales force, do not yet represent a number great enough to provide the number of follow-up calls which a salesman should make daily.

Qualification of prospects under present conditions is almost solely on the basis of the current earning power, a past good credit rating counting for naught if the man has no steady income, Hodge says.

Financial Qualifications

The matter of qualifying prospects as to financial capability is important in that it saves the refrigerator salesman from wasting time on a prospect who is unable to buy at the present time, the Majestic sales manager points out.

Hodge selects all the retail salesmen who work under him. He attempts to pick them on the basis of the way in which they put themselves over to him, for he believes that if they can sell themselves they will have little difficulty in selling themselves and their product to prospects.

Perseverance is a large factor in "making" sales, Hodge claims. Perseverance in ferreting out prospects, as well as in refusing to accept "no" for an answer from the prospect sometimes is a salesman's strongest point, he believes.

Salesmen Report Daily

He cites the example of a green salesman who hung up a startling record. In one of his early sales this salesman called on his prospect in the morning, stuck to his story right through the lunch hour, and closed the sale later that afternoon.

Salesmen turn in daily report sheets, which are in turn converted into worksheets by the supervisors so that a salesman is given from eight to 12 follow-up calls daily. Further reports made on these follow-ups result in an elaboration of the work sheet.

The salesman is given a definite dollar volume quota to attain, and if he fails to make this for two or three months, he is put in an unfavorable light and may be dropped from the force.

Salesmen who make a somewhat higher volume set out as the "bonus quota" receive an extra 2 per cent commission on this figure.

Every prospect is placed on the list for direct mailings, and receives a series of instructive literature.

The mailings are properly "staggered" so that the prospect will be called upon by a salesman not too long after he has received a piece of this literature.

Training of salesmen is done by the supervisors at weekly general meetings held at the store. At this meeting all types of questions are brought up and discussed.

If a salesman fails on a job, the supervisor makes it his job to find out why—even if he has to talk to the former prospect about it. In this way, Hodge points out, the salesman's weakness is discovered—and corrected, if possible.

When canvassing, the men carry no sales kit. What literature or visual sales help they intend to use is carried in their pockets. The enormous amount of canvassing done today makes it necessary for the salesman to appear less obviously the "drummer" than ever before, Hodge points out.

On follow-ups when the contact has been established and more definite information and "pictures" must be laid out before the prospect, the sales kit may be carried.

Showroom demonstrations are advocated by the trainers as a means of bringing the product before the prospect, so that the mental picture built up by the salesman will be enhanced by an actual look at the product.

Salesmen call on a buyer the day following the installation of the refrigerator, to see that the installation has been carried out to the satisfaction of the buyer and to get names of friends who are prospects.

"Every sale should result in five real names for the prospect list," is one of Hodge's maxims to his salesmen.

DEALER SELLS UNIT AFTER INSTALLATION

MISSOULA, Mont.—Every new apartment building or house started in Missoula is a prospect lead for R. M. Vieths, sales manager of the Montana Power Co., General Electric utility outlet for the F. B. Connelly Co., Montana distributor.

Through arrangements with the city officials, the Missoula division of the power company is advised when a building permit is issued. Without delay the owners of the proposed new buildings are contacted, and plans are made to install General Electric refrigerators, and in some instances entire G. E. kitchens.

The refrigerators are not bought by the builder of the structures, but are merely placed in the kitchen ready for purchase if the new owner wishes them to remain.

Between the time a house or an apartment is begun and its completion, hundreds of persons have inspected the place, and each has seen the General Electric refrigerator installation.

A small card, placed where every visitor will see and read it tells that the installations were made by the Montana Power Co., and that terms of purchase may be obtained from the local branch.

To date there has been but one refrigerator returned.

NEW YORK FRIGIDAIRE TO STAGE SPRING OPENINGS

NEW YORK CITY—Plans for a Spring Opening in all showrooms are being completed by Frigidaire Sales Corp., 39 W. 45th St., here, according to D. R. Lawrence of the sales planning division.

The plan, which was used last year, includes special decoration of showrooms throughout the dealer organization, and the use of real food to show a thrift budget idea in relation to quantity buying made possible by the use of Frigidaire.

A premium—a glass ice cube tub—will be awarded to prospects accepting a home demonstration during the campaign period.

SALESMEN ATTEND TEXAS SERVEL DEALER MEETING

LONG VIEW, Tex.—A group of retail salesmen of the S. C. Fareman Furniture Co., dealer for Servel Hermetic electric refrigerators in this city, attended the recent sales meeting conducted here by R. M. Bilhimer, Servel district sales representative.

Sales promotion and advertising plans were outlined to the group, which also included a number of representatives from the Star Furniture Co., Servel Hermetic dealer at Kilgore, Tex.

Speakers included sales managers of the two dealer firms and Mr. Bilhimer.

REFRIGERATION MEN FORM GLENWOOD, MINN., BUREAU

GLENWOOD, Minn.—Five refrigeration dealers here have organized an Electric Refrigeration Bureau, and have embarked on an intensive spring campaign of outdoor advertising and window display, according to announcement by A. J. Hakes, secretary.

Makes of refrigerators represented in the new bureau are: Frigidaire, General Electric, Kelvinator, Majestic, and Norge.

FOUND!

A new hundred million dollar market

IN THE FAMILY REFRIGERATOR

...It's new, it's beautiful, it's original in its efficiency . . . this set of Federal Refrigerator Furnishings. Never has anything like it been offered to the American Housewife yet always has just such an idea been needed. It eliminates entirely those space-robbing inefficient, odds and ends of dishes and pans which litter up the family refrigerator.

Here it is, a space saving, food saving, money saving set . . . and what a market! . . . Fourteen million prospects . . .

PROFITS

TO THE TUNE OF

32 million dollars await dealers

NATIONAL ADVERTISING *in the Saturday Evening Post and other periodicals*

FREE WINDOW DISPLAY

brings them into your store

FEDERAL REFRIGERATOR FURNISHINGS
DOUBLE REFRIGERATOR CAPACITIES

FEDERAL Big 5
VEGETABLE FRESHNER
VEGETABLE FRESHNER Pulls out like a drawer. Opens automatically as you pull it out. Self ventilating.
WATER COOLER with fast flowing, pull-down push-up faucet For ice-tea, lemonade or water.
FOOD SAVER No 2
FOOD SAVER No. 1. Just fits a pound brick of butter a handy size for tid-bits.
FOOD SAVER No. 2. A handy utensil for cooking, cooling or storing a variety of foods.
FOOD SAVER No 3
FOOD SAVER No. 3. Ideal for baking, for storing, and extra ice-cubes. No.'s 1 and 2 nest on the cover of No. 3.

RETAIL PRICE $8.95

FRESHNERS AS LOW AS 85c
SINGLE ITEMS FROM 45c up

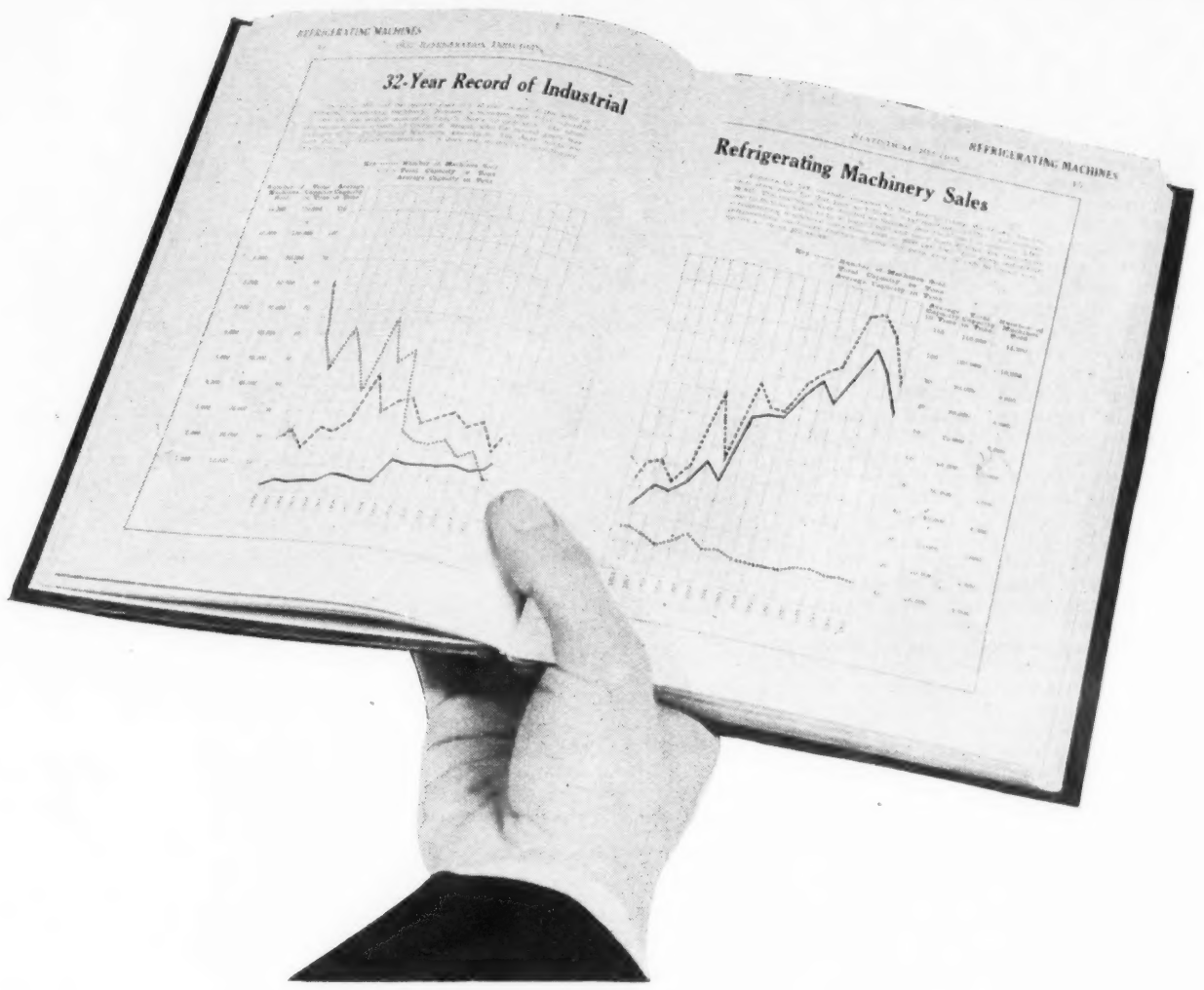
PRICES SLIGHTLY HIGHER IN THE FAR SOUTH AND WEST

The first full-page advertisement announcing this set soon to appear in The Saturday Evening Post should find you ready . . . ready with your counter and window display and stocked with enough Federal Big 5 sets to meet the demand. Get started. Act before your competitor does. Write direct to . . .

FEDERAL ENAMELING & STAMPING CO.

"The World's Largest Producers of Enameled Kitchenware"

PITTSBURGH, PA.



THE OPEN BOOK

TO REFRIGERATION SALES FACTS, FIGURES and NAMES

"Knowledge is power"—when you put your knowledge to work. In one volume of 470 pages, the 1932 Refrigeration Directory and Market Data Book presents refrigeration knowledge you can put to work for yourself, no matter what your connection with refrigeration may be. A complete picture of the industry . . . its record to date, a detailed story of its more recent developments, an analysis of its present plan of operation, the results of a merchandising survey covering distribution methods of 497 distributors and 20,879 dealers. And there is complete information on all sources of supply for products and services . . . an efficient buying guide for manufacturers, distributors, dealers. No refrigeration establishment can be considered adequately equipped without a copy of this invaluable book. It costs only $2.00 a copy, postpaid in the United States.

BUSINESS NEWS PUBLISHING CO., 550 Maccabees Bldg., DETROIT, MICH.

A BIG COUPON FOR BIG RESULTS. MAIL IT TODAY!

Business News Publishing Co.,
550 Maccabees Bldg., Detroit, Mich.

Enclosed is $2.00 for which please send a copy of the 1932 Refrigeration Directory and Market Data Book.
(Add 50 cents extra for foreign postage.)

Name .....

Address .....

City and State .....

How To Sell Refrigerators

As Practiced By J. L. Hudson Co., Detroit

By Gertrude Stanton

DETROIT—Sale of 152 refrigerators in nine days was reported by the electric refrigerator department of the J. L. Hudson Co., department store here, following a spring drive covering that period. Thirty-two of the refrigerators were sold Saturday, April 9, the closing day of the drive.

No special price offer was made to aid in the drive, according to J. B. Ogden, manager of the refrigeration department. The advertising stressed the point that here was an opportunity for buyers to compare the various makes of refrigerators. Ninety models, representing nine makes, were on display on the floor.

The refrigerators merchandised by Hudson's include Apex, Copeland, General Electric, Kelvinator, Leonard, Norge, Frigidaire, Electrolux, and Westinghouse.

The greater part of advertising promotion for the special display was made through the newspapers, but one piece of direct-mail was sent out. This was a small green card of invitation to the show, giving the list of makes to be seen, and catching the interest by means of two cartoons, showing "Clara and Clarence," a husband and wife who appeared in all advertising for the display. About 50,000 of these cards were sent out in Hudson package delivery.

Beginning March 31, newspaper advertising was used, with drawings of "Clara and Clarence" and their friends, discussing the various makes of refrigerators each day. These drawings, Mr. Ogden reports, brought an unusual amount of comment. They were designed by the Hudson advertising department.

Advertising stressed quality, food preservation efficiency, and other advantages of electric refrigeration throughout. No special offers on down payments or any other inducements were used.

The total was about 25 per cent greater during the nine days of the display than for a similar show last year at this same time.

The first year that such an effort was attempted, the show was put on in the Hudson auditorium, according to Mr. Ogden. A much greater space was used, and much more pains were taken with display.

Mr. Ogden believes, however, that it is a mistake to get customers away from the "buying atmosphere." When the display took on the aspect of a show, he said, and when it was fairly remote from other buying activity, results were not as satisfactory as when the usual selling space was used.

As it was, the regular refrigerator space on the tenth floor was given over to the display. Tenth floor, which includes other household supplies, gardening supplies, fine china, etc., accounts for almost a third of the purchases made in the whole of the department store normally, Mr. Ogden stated.

Added attractiveness was given to the refrigerator display by the use of tables set with glass and china for luncheons, breakfasts, and formal dinners.

The nine salesmen employed by the department were all called in to work in the department during the show, and, in addition, several of the manufacturers represented sent hostesses who, dressed in white uniforms, served frozen desserts to those who entered the department. These girls also talked to the prospects about the refrigerators until a salesman was available to look after them, and sometimes had the customer almost sold by the time the salesman came to take the order.

How does the salesman determine which of the nine makes to show to the customer first? Mr. Ogden replied that he first tries to learn how many members in the customer's family, and what refrigerator he had thought about.

"Almost always the customer has made a tentative choice, brought about by advertising, or by hearing about the one particular make. When the salesman learns this, he tries to sell that make to the prospect, only going on to another make if he senses dissatisfaction or loss of interest."

The salesmen are not informed which makes give the greatest discount to Hudson's, and thus their efforts are entirely unbiased.

Only one of the makes—Frigidaire—is being merchandised on the meter basis at this time, Mr. Ogden pointed out, and thus a test of the efficiency of the scheme is being made.

No cold-canvass methods are used by the department store in merchandising refrigerators. Prospects who call at the store, or who telephone that they wish to talk refrigerators, are visited, but that is all.

The reason for this lies in store policy as well as in Mr. Ogden's own beliefs.

Heads Chamber of Commerce

E. A. Johnston, president of the Brown-Johnston Co., Mayflower distributor for Spokane, Wash., is also president of the chamber of commerce.

Creator of 'Tillie the Toiler' Buys G. E.

NEW YORK CITY—Russ Westover, cartoonist and creator of "Tillie the Toiler," which appears in newspapers all over the country under the King Feature Syndicate, has been the owner of a General Electric refrigerator since February.

William Kromholz of New Rochelle, salesman for Rex Cole, Inc., made the sale. When an electrician was installing a power-meter in the Westover home in connection with the refrigerator's installation, he received a check for his work that had a hasty sketch of "Mac," character in "Tillie the Toiler."

J. Powers, a Rex Cole man in whose territory Mr. Westover lives, clamored for a sketch on his next call at the Westover home. The sketch showed "Mac" looking at a General Electric and caying "That refrigerator reminds me of Tillie—it's so good looking and so cold."

Joins Lock Firm

B. H. MORASH
Former refrigeration man joins Dudley Lock Corp. of Canada.

* * *

B. H. MORASH NAMED HEAD OF DUDLEY LOCK BRANCH

RUTHERFORD, N. J.—B. H. Morash, associated with the electric refrigeration industry in its export business for a number of years, has been appointed Canadian manager of the Dudley Lock Corp. of Canada, Ltd., which is being organized by the Dudley Lock Corp. of Chicago.

The company manufactures padlocks and built-in locks. The new Canadian branch will be located in Toronto, and will sell and manufacture the product for Canadian and British Empire trade.

Mr. Morash was for eight years with International General Electric Co. four of which were spent as sales manager in Japan. For four years he was with W. R. Grace & Co., including two years in India as assistant manager of sales and engineering.

Two years Mr. Morash was sales manager of the General Refrigeration Co., Beloit, Wis.; and for four years he was with Kelvinator, two of which he was managing director of Kelvinator, Ltd., London, Eng., and during which time he organized Kelvinator distribution in Japan and Manchuria.

HALE HEADS BUREAU AT FALL RIVER, MASS.

FALL RIVER, Mass.—Harry W. Hale of the Fall River Electric Light Co., has been elected chairman of the newly reorganized Electric Refrigeration Bureau of Fall River, Mass.

Other officers are: Joseph S. Thomas, Mt. Hope Electric Co., vice chairman; Louise H. Thompson, secretary, and Frank D. McAuley, treasurer.

Merrill Hawkins of Gee & Hawkins, Kelvinator dealer, is chairman of the executive committee. New by-laws were adopted by the bureau at its first meeting.

SERVEL DISTRIBUTOR NAMES WHOLESALE MEN

SPRINGFIELD, Ill.—R. M. Hodde and G. J. Richards have been appointed wholesale representatives of the Capital City Paper Co., Servel Hermetic distributor in this territory.

2 NEW DISTRIBUTORS CHOSEN BY LEONARD

DETROIT—Two new distributors, the Symons Dry Goods Co., Butte, Mont., and the Gilham Electric Co., Atlanta, have been announced for Leonard electric refrigerators by R. I. Petrie, sales manager.

Harry Symons is president of the new Butte outlet, and J. S. Cohen is secretary. Harry Gilham is president of the Gilham Electric Co.

17 Dealers Appointed

Seventeen new dealers to operate under five Leonard distributorships have also been announced. These include the following, appointed by the Dakota Electric Supply Co., Fargo, N. D.; Powlinson's Electric Shop, Wheatland, N. D.; D. S. Goodman, Dawson, N. D.; Charles A. Johnson Electric Co., Casselton, N. D.

Roy C. Morley, Goodrich, N. D.; A. Arndt, Enderlin, N. D.; K. F. Heiberg, Dilworth, Minn., and James River Electric Co., Jameston, N. D.

A. A. Schneiderhahn Co., distributor at Des Moines, has announced the following: Walsh Brothers, Lesterville, S. D.; Jefferson Hardware Co., Jefferson, Iowa; Johnson Motor Co., Grundy Center, Iowa; and H. Boettcher & Sons, Tracer, Iowa.

2 New Milwaukee Dealers

Two new Milwaukee dealers have been appointed by J. J. Dougherty Co., Inc., distributor in that city: Mueller Radio, Inc., and Pissecki Radio Shop.

In Indiana, four new dealers now have the Leonard franchise: Reid Electric Supply Co., Elkhart; E. W. Crouse Sales Co., South Bend; Radio Sales & Service Co., Brazil, and E. N. Frederman, Riley.

FRIGIDAIRE DEALER SHOWS COMMERCIAL SALES GAIN

STAMFORD, Conn.—A gain in volume of commercial refrigeration installations is reported by Carl G. Schumacher, refrigeration sales manager for The Downes-Smith Co., Frigidaire dealer in the Stamford and Darien territory.

Three large market installations were recently completed by the firm. Two compressors, a W-5100 and a W-350, with two DX-45104 coils, one DX-1854, and one DX-25104, were installed in the Epicure Food Shop, Prospect and Broad Sts., here, to cool a 10x10x8-ft. walk-in cooler and three 9-ft. showcases.

A W-5100 compressor, hooked up with two 1278-F coils and one 76-F, will supply refrigeration for an 8x8x10-ft. walk-in cooler and a 9-ft. showcase in the new Hamilton Market, Hamilton Ave.

A 6x8x10-ft. walk-in cooler and two 8-ft. showcases in the new Royal Scarlet Stores market on Bedford St. will be cooled by a W-5100 compressor, two DX-4580 and two DX-1854 coils.

ANDRES HEADS SALES FOR GRAND RAPIDS GAS CO.

GRAND RAPIDS, Mich.—E. E. Andres, formerly with the Detroit City Gas Co., has been appointed manager of refrigeration sales by the Grand Rapids Gas Light Co., according to G. Halliday, sales manager.

Mr. Andres has been connected with the Michigan Federated Utilities in the new business department, and was at one time a buyer in one of Detroit's mercantile concerns.

It's Too Important to Take for Granted

YOU can spend thousands of dollars and years of time to produce an efficient and economical unit, but unless the cabinet that houses that unit is built accurately, your refrigerator *will not be satisfactory.* * * * A cabinet *is* too important to take for granted. Entrust your cabinet needs to a manufacturer whose skill is proven . . . whose product is known . . . whose equipment for manufacture is among the best . . . whose record in the refrigerator field merits your full confidence. * * * Write or wire today for full information on

TENNESSEE CABINETS

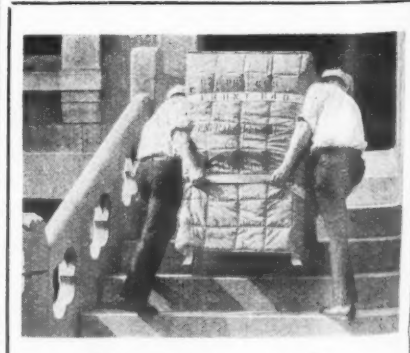
Refrigerator Division

TENNESSEE FURNITURE CORPORATION

CHATTANOOGA, TENNESSEE

CAVALIER DISTRIBUTORS

. . . . The complete Cavalier Electric is proving a profit-maker for distributors all over the nation. A few territories are still available . . . . . Write or wire for details of exclusive franchise.



Faster, safer deliveries with

WEBB *Slingabout*

Registered U. S. Patent Office

Up the steps in jig-time goes the refrigerator delivered in a WEBB *Slingabout.* The strong webbing sling, reinforced with sole leather, offers convenient hand-holes on every side.

Safety to the refrigerator and to the walls and woodwork of your customer's house is assured by this thickly padded, flannel-lined canvas jacket.

Tell us what line you handle and we will gladly quote prices.

WEBB Manufacturing Company
Amber & Willard, Philadelphia

'Utilities Can Capitalize on Complaints'—Billingsley

Advertising Executive Explains Value of Stressing Customer Relations

By A. L. Billingsley
President, Fuller & Smith & Ross, Inc.

WHEN I was younger in the advertising agency business I used to fret a lot about some of our problems of customer relations. It annoyed me because clients frequently appeared unappreciative of the work we did for them. They seemed to have little comprehension of the thought and effort we expended. They apparently gave snap judgment on subjects about which we had thought for weeks. Some few of them seemed to operate on the idea that the way to make us work was never to appear satisfied with what we did.

I talked over these conditions with other agency men, especially, one day, with a gray-haired veteran who then was head of the American Association of Advertising Agencies. He heard me out, agreed with me, then told me something I have never ceased to remember:

"You can write this down in your little book," he said. "No client is ever going to lower all his defenses when dealing with his advertising agency."

Unappreciative, Unresponsive Public

I often think of that remark when I hear utility men discussing their problems of customer relations. You think, many times, that you have an unappreciative and unresponsive public. You encounter what you feel are erroneous interpretations of your intent and attitude. It often appears that you can't do anything that will satisfy all sections of your market.

Who and what is responsible for that condition? Is there any hope of your completely rectifying it? What is the normal attitude you can expect from your customers?

An outsider cannot answer these questions categorically. He may, however, throw light on them because he views them from a different perspective.

It is characteristic of large institutions to formalize many of their problems. They give them a name. They set them up as subjects for organized consideration and discussion. "Customer Ownership," "Public Relations," "Domestic Load Building," "Employe Education"—these are some of the subjects utilities are continually studying and discussing. At the present time, "Customer Relations" is in the headlines of their meetings.

A Practice with Disadvantages

I wonder, sometimes, if this very practice—which is a tribute to your seriousness and earnestness—does not often put you at a disadvantage in seeing a particular set of problems for exactly what they are. Formalizing them does give them emphasis and attention and provokes discussion. But unless you are on your guard, it may remove them from their natural setting—may distort your views—may lead to certain useful conclusions, and also to others that are purely theoretical.

For example, just last week I asked a friend long associated with the electric utility industry to tell me what *"good"* customer relations would mean to a utility.

"How would you measure 'good' customer relations?" I inquired.

"What, exactly, would you have if you had 'good' customer relations?"

Defines 'Customer Relations'

He gave me four points with which you may or may not entirely agree. Here's the way he stated them:

1. Absence of complaints about treatment or service.
2. Absence of dissatisfaction with rates.
3. Absence of unfavorable agitation against the utility.
4. A general appreciation of the utility's service, and what it is trying to do.

Now let's look at these four measuring sticks a minute. I think you will concede that they do indicate the accepted objectives of good customer relations.

Three of them are purely negative statements. Absence of complaints is negative; so is absence of dissatisfaction with rates; so is absence of unfavorable agitation. Only the fourth point is positive—general appreciation of the utility's service and what the utility is trying to do. Yet this fourth point is not an objective in and of itself.

Why does a utility want no complaints—no dissatisfaction with rates—no unfavorable agitation—a widespread appreciation of what it is trying to do?

Doesn't it want these things for sales reasons almost exclusively?—not appliance selling particularly, but all kinds of load-building promotion?

Customer Relations Are Sales Relations

I believe it is fair to say that in the final analysis you want good customer relations because these mean good sales conditions for you. Complaints are harmful in that they militate against sales. Rate dissatisfaction is unfavorable in that it restricts sales. Agitation is harmful in that it is an impediment in the market. General appreciation of the utility's service is valuable in that it aids in expanding the market for what the institution has to sell.

I do not say that the entire philosophy of a utility in building customer relations is a sales philosophy. You do more than merely sell appliances and current. You also must deliver these products satisfactorily, and you have to finance your operations. There are questions of customer relations which concern themselves with delivery and with financing almost entirely.

The Positive View

However, there are other relations that to a very important degree are sales relations—they grow out of selling efforts—they are reflected in sales resistances. The measure of such customer relations therefore is a very definite extent a sales measure. That, it seems to me, is the positive way to look at the customer relations problem. It is not something distinct of itself. It is part and parcel of the utility's whole selling problem.

When you take this point of view, things fall into a somewhat different perspective. You find, in the first place, that the very act of aggressive selling—a thing all utilities now want to do—creates a new set of customer relations difficulties. In the very nature of things, it is destined that this should be the case.

Ideal customer relations would seem to imply calm, peace, quietude, and satisfaction with everything. My definition of good customer relations with my bank, for instance, would be to have it accommodate me whenever I need accommodations—to be courteous to me—to be ready to serve when I want to be served—to fit into my particular scheme of living the way I personally want to have it fit.

My bank can't always do that, however, and remain a commercial institution. It has to cultivate its market aggressively. So it advertises that it wants my account—that it makes loans—that it will help me in my business. I take it at its word and go down to borrow money. Then I learn with surprise and disappointment, that the bank isn't lending money to my kind of business.

I'm sore—I feel that the bank is autocratic and hard-boiled—that it doesn't take anything like the interest in me I feel it should take.

Conditions that Hurt

Then maybe by the very time I get back to my office a bond salesman for that same bank comes in to talk to me about investments. He paints a picture of a profit opportunity—which I, alas, give ear to. I buy. Then, as has happened to me, the bond falls far below the price I paid for it. The company goes into receivership. I am, to put it mildly, hurt again.

Technically, in both these instances, the bank has done nothing that it is not supposed to do. It does not guarantee to loan me without restraint when it solicits my account and tells me that it will help me. It does not guarantee that every bond it sells will never fluctuate in price.

If a Business Could Be Passive

If the bank just sat there and never solicited business, or made any claims designed to attract business—if it just waited for me to come in and find out whether I could borrow money; if it just said, "Yes, we have bonds, and if you have any money we'll sell them to you, but bonds, you know, aren't always the safest thing to buy"—the customer relations problems of the bank would be simpler and far more satisfactory today than they actually are at this particular time in banking history.

But banks can't sit passive. They are out to develop business. So they solicit—they advertise—they preach the virtues of saving and investment—they talk about a backlog of bonds as security in one's old age; they press the public to buy; and customer relations problems are thus created.

Selling Creates Dissatisfactions

What I am saying is very elementary—but I think it is pertinent to your situation. The gentle art of aggressive selling is a process of creating dissatisfactions—of making people desire something they don't now have—of making them unhappy till they have it—of persuading them to pay a price for it in terms of sacrifice and effort. Creating dissatisfaction is in itself contradictory to the basis of good customer relations—which is tranquillity, peace, complete satisfaction with things as they are.

The other day I sat in a meeting of food packers. The meeting was being conducted by the scientists and domestic economists from the food industry, colleges, utilities, and magazines. The subject under discussion was, "What the consumer wants in food advertising."

There were many eloquent condemnations of the flowery language of current advertisements—the pictures of nymphs and waterfalls—the far-fetched straining after startling effects.

"Give us information—facts—the things we want to know," said the consumers through these scientists and economists.

Finally the head of the food laboratories of a great university was called upon. "I have been much interested in all that has been said here," he observed. "But I think I ought to tell you that you'll never get food advertising that entirely pleases you. That isn't what the food manufacturers are paying their money to advertise for. They want to create dissatisfaction—not satisfaction. They want to shock you—if they think that's what will make you buy their goods. They want to flatter you, or high-hat you, or cajole you, or scare you—depending on what will sell the most food for them. What you face is not a theoretical state, but a very practical condition."

That statement will also hold for modern utility activities.

You Can't Separate Them

You can't separate your customer relations problems from the very practical conditions that give rise to them. One of these conditions is that if you're going to get more business, if you're out aggressively to build load and increase current consumption by the most aggressive methods, you're going to create a set of customer relations problems by that very act.

You can't, for instance, use high-pressure selling methods and not have somebody resent it. You can't turn salesmen loose on commission, and pound them to get business, and expect them of their own accord to be always judicious in whom they approach, perfect gentlemen in forcing themselves inside the front door, modest in all the claims they make for their product, considerate of their competitors, and genuinely concerned with the best interests of the housewife and her family. You can't aggressively campaign one manufacturer's product and have dealers of competing products love you for it. You can't tell meter readers to sell appliances and not have them get on somebody's nerves.

Applies to Commercial Policies

I only use selling as one illustration of the situation. The same thing applies to every other commercial policy. The particular practice you follow in charging for your current—and the rates you charge—create a set of customer relations problems peculiar to your practice. So does your policy in seeking franchises—so does your attitude on political and public questions. You can't separate customer relations problems from your commercial and managerial policies.

I bring this out because I think I detect at times a feeling among utility men that good customer relations are something you can set apart and consider separately from other things—a feeling that you either have good customer relations or you don't have them; that not having them you can set about creating them independently of your other activities—that when you have created them, you have something that you own and can expect to keep more or less permanently.

That, I believe, is a purely theoretical view of customer relations. Customer relations are something you build while you are building something else. They are something that does not exist apart. You never have them in the same form permanently—they change with each evolving expression of your commercial work. They are good or bad, as you are able successfully to do the things which you desire to do commercially.

A Technique Necessary

Such being the case, it is necessary that utilities face frankly the effects that their commercial policies and their commercial desires may be expected to have upon the feelings and attitudes of their customers. It is necessary that a technique be constantly in operation that will offset any of the bad effects—strengthen the good ones.

One of the first requirements of such a technique, it seems to me, is to have a clear picture of every policy—to know what its effects on customers may be—to recognize the dangers—and to set into motion the proper correctives.

I have often felt that one of the reasons utilities meet unexpected states of mind among customers is because their policies are not clearly known throughout their own organizations, and are not always thought through at the source. I think there is a place in utility operations for published policies and for printed codes of practice. We have had much experience with codes and formally expressed policies in other industries. While they are open to some objections, they do have the advantage of making

(Concluded on Page 16, Column 1)

● This was a problem . . . but not any more! We've settled it. No one ever did like to get all wet, splashing around the sink taking ice cubes out of metal freezing trays.

So we made *flexible rubber freezing trays*. And you just *lift* out the cubes when they're frozen . . . one at a time or all of them. The tray is dry. Your clothes are dry. The ice is dry.

No melting, splashing, tugging, pulling, pounding. The cubes are never shattered or broken. And because they're dry—larger—colder and cube-shaped—they last longer. They're clean and as pure as the water you use.

More than a million forward-looking refrigerator owners are now using this sensible, modern freezing [illegible] holds.

THE INLAND MANUFACTURING COMPANY
Dept. O-5, Dayton, Ohio

2-9

Flexo Tray
ICE CUBES—THE MODERN WAY

CRASHING THROUGH TO NEW SALES RECORDS

DISTINCTIVE ADVERTISING THAT IS HELPING DEALERS SELL MORE FLEXIBLE RUBBER FREEZING TRAYS

● Yes, the sale of Flexible Rubber Freezing Trays is growing with giant strides. And no wonder. First, they're the *modern* trays for freezing ice cubes. And we're telling the world about them . . . in a way that's new and distinctive.

The advertisement reproduced on this page is an example. Others like this are appearing regularly in magazines of nation-wide circulation. They're going into millions of homes . . . thousands right in your territory. They're going to present owners of automatic refrigerators, as well as to those who soon will buy. And they're "selling" the flexible rubber freezing tray idea as it has never been sold before.

But there's another important reason for the tremendous sale of this modern tray. This reason lies in the tray itself. The ease and convenience it offers in serving ice cubes from *tray to glass* are qualities that practically make it "sell on sight." Although it has been on the market only a comparatively short time, it is now used by more than a million owners of automatic refrigerators. What an impressive tribute to its sales possibilities!

Here's an opportunity for *new* profit—*extra* profit—for you. Sell this modern tray to present users of the refrigerator you represent. Sell it to purchasers of new refrigerators. Use it to help close sales for new refrigerators. You'll be agreeably surprised at what it will do for you in building good will, increasing sales volume, and increasing profit.

All the leading makes of automatic refrigerators now have this modern, flexible rubber freezing tray as standard equipment. Write to the refrigerator manufacturer you represent, or to us direct, for complete information.

THE INLAND MFG. COMPANY, DAYTON, OHIO

Flexo Tray
Registered U. S. Patent Office — Patented and Pats. Pending

ICE CUBES ● THE MODERN WAY

2-18

BILLINGSLEY EXPLAINS UTILITY COMPLAINTS

(*Concluded from Page 15, Column 5*)

the management think through definitely on a policy—of going on record concerning it—of considering in advance all the effects it may have. Code statements promote the setting up of arrangements for off-setting any unfavorable effects on public and customer relations. They bespeak sincerity. Above all, they automatically help to educate the entire organization and make it a unit. I would recommend the consideration of published policies and codes as one of the basic steps in any program for building and improving customer relations.

Right Attitude Toward Complaints

A second requirement in customer relations technique is to have the right attitude toward complaints. Complaints are the expressed measure of the effects on the public of your performance and your policies. But because the very sound of the word "complaint" is unfavorable, I think there is a tendency for utilities to place too much emphasis on the numbers of complaints that may exist and to try to keep the number down. I do not favor any program which deliberately provokes complaints or which deliberately sets an organization to seeking them, but if I were managing the commercial activities of a public utility I would want to be sure my organization understood that my attitude was not one of trying to keep the total number of complaints down.

I have gained the impression that in many utilities—as well as in other concerns—there is an effort to look at the total number of complaints and feel that the property which reports the fewest has good customer relations. That point of view may be fallacious. It depends on how alert the organization is to receiving complaints—how constructively it views them—how adroitly it converts them into favorable attitudes.

You want to know what reaction your commercial policies are having on customers, and the only way to find out is to observe your customers. Complaints are your most definite source of reaction. Accordingly, you should receive them, study them, learn from them, be guided by them. Above all, you should have a clear procedure for handling them and for giving satisfaction. You should train your people so that they do not take pride so much in a small number of complaints, as they do in the lack of significant cause for them. Complaints are to be regarded as opportunities for building good will, and for creating selling opportunities through interested and intelligent handling.

What to Expect of People

A third thing about a customer relations technique is not to expect too much of people; as my agency friend said, not to expect them when dealing with you to have all their defenses down. This involves a frank appreciation of the nature of the utility business and a shrewd understanding of human nature. It is not a question of whether people are right or wrong, it is a question of phychology—how people react.

For example, it is a well-known fact that people generally distrust that which they do not understand. That is an elementary psychological truth. Your business—a public utility—differs from others in that your product is invisible, and based on complicated engineering principles. Therefore, the processes of rendering a satisfactory service are different than those of an ordinary business.

For people to misunderstand and to fail to appreciate your service is, accordingly, normal and not abnormal. It is exactly what you can expect. You can expect to prosecute an unceasing educational job with your customers. The responsibility to have your business understood is something that rests on you, and not on your customers.

Another simple psychological truth is that in any conflict of interest between an individual and an institution, public sympathy usually flows toward the individual. A policeman represents the public—he also represents the institution of government. At a ball park, when you see an individual in conflict with a policeman, where do the sympathies of the crowd usually go? They go to the individual—not to be policeman.

Accordingly, when a utility gets into conflict with an individual in its market, you can expect public sympathy normally to flow toward the individual and not toward the utility. There just "ain't no justice" for a utility if it locks horns with an individual. In your policies you need to recognize this, and to recognize that you may have to do many things far beyond what justice calls for to have your business viewed fairly by your customers.

Americans and Democracy

That Americans don't like democracy when applied to themselves is another simple truth that utilities need to take account of. You make a point of saying that every individual gets the same quality of current, pays the same price for it, receives the same treatment. Yet you only need to look around to see that the average American does not want just that—he is happiest when he gets something that represents a preference over his fellows. If he can get a parking privilege that is denied the mass of people, he boasts about it. If he can get the first new style motor car, he will go great lengths to obtain it. If he can get number one on his license plates he'll make a trip to Harrisburg to negotiate it.

Other retailers take cognizance of this human trait. They have a one-price policy and they have standardized styles and qualities. When a customer comes in, however, they fuss over him, they show him everything, they try to give him individual attention, they make him feel that he is tremendously important as an individual.

Individualize Customers

Do utility representatives do that? Maybe it is impossible to do it to the extent that other sellers do. If you can't, it is necessary to recognize frankly that you are at a disadvantage on that point. But your aim should be to shape customer relations policies so as to individualize your customers as much as possible and to play up each customer's feeling of individual importance. The red tape which utilities are all so conscious of, affects customer relations adversely in that it makes the individual feel unimportant and one of the herd. Impersonal attitudes on the part of employes aggravate this condition. It is a fundamental handicap which you must recognize and offset.

The plain, blunt truth is that people like to see the seller worry—they feel the obligation is on him to accomplish satisfaction with the buyer. What I am saying now is what the head of the American Association of Advertising Agencies said to me about my own customer relations. You simply can't expect everything to be tranquil and peaceful in your dealings with your customers—that is, not in this world. They want you to make a fuss over their business. They want you to worry about having them satisfied. They want to feel important in your eyes. They want you to show concern over holding their favor. They're just human—like you and me.

Worries that Can Be Obviated

Accordingly, customer relations policies cannot be shaped with the ultimate hope in view that you will obviate the necessity of ever having worries about your customer relations. I think they should be shaped with a recognition that worry is incumbent upon you—that you must show the customer more clearly than you have shown him in the past that you feel your life is in his hands—that you recognize that you must satisfy him—that you are concerned with the possibility of not having satisfied him. That is simply good common sense as well as sound psychology . . . and it's necessary.

A prominent merchant once said impatiently that his business would be all right if it weren't for the odd notions of his customers. You might say the same thing—your business would be all right if it weren't for the peculiar ideas of your customers. However, although I am talking to a utility man who takes his business very seriously, I am sure you will remember that the old Quaker who said, "Everybody is peculiar but thee and me," said it with a smile.

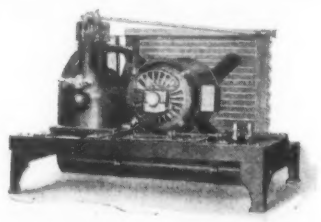
The

Universal Cooler Line

COVERS EVERY MARKET

THE unusual completeness, economy and dependability of the Universal Line means success to Universal Dealers in every phase of domestic and commercial refrigeration. In addition to a thoroughly modern and complete domestic series, the Universal Line includes milk coolers, water coolers, coils of every size, compressors ranging from 1/6 to 1½ H.P. and special units for all commercial purposes. We will shortly announce a larger condensing unit suitable for all commercial purposes and especially adaptable to air conditioning work.

Write for further particulars



Universal Compressor No. 150. A 1½ H. P. Model

Universal Cooler Corp.

Detroit, Mich. - - Brantford, Ont.

SERVEL BILLBOARD POSTERS TO BE USED IN INDIA

MADRAS, India—India will be invaded this season by Servel 24-sheet poster showings, as one of several foreign countries included in the sales promotion plans of the Servel export department this year.

Order for the posters was recently placed by J. C. Mallen, Servel sales manager in the Madras territory of F. & C. Osler, Ltd., distributor in India. They will be on display about May 1.

Intensive sales plans have been started by F. & C. Osler, Ltd., in Madras, Calcutta, Bombay and Delhi.

RADIO, AUTO FIRMS OPPOSE SALES LEVY

By George F. Taubeneck

WASHINGTON, D. C., April 18.—Moguls of the automobile and radio industries today pled with the Senate Financial Committee to adopt a general sales tax rather than single out a few industries to bear the burden of balancing the budget.

"Discrimination" was the cry raised by every speaker.

Frank D. Scott, counsel for the Radio Manufacturers Association, raised the point that the radio industry would be doubly "soaked" by the revenue bill as passed by the House, for many radio manufacturers are now making electric refrigerators, on which a five per cent sales tax would also be imposed by that bill.

Mr. Scott introduced high executives of Crosley, Philco, RCA-Victor, Sparton, Stewart-Warner, Gulbransen, Silver Marshall, De Forest, and other radio manufacturing organizations for whom he acted as spokesman.

Only 10 years old, radio is a "baby" industry, Mr. Scott pointed out. It has grown to great heights, but has been "tobogganing downward almost as rapidly."

"High priced radios are a thing of the past," he asserted. "Today the market for radios is composed of poor men. The aggregate retail price of radio sets sold in 1932 was actually less than the cost of production."

Paul B. Klugh, general manager of the Zenith Radio Corp., averred that no radio manufacturer is making money today.

"Fifty million dollars have been lost in the last two years by the radio industry," he declared. "This sum has been taken out of reserves and capital."

Mr. Klugh pointed out that in 1929 the total gross business of the radio industry had been six hundred eight million dollars (based on sale of four million radios at average price of $122 plus sale of fifty million dollars worth of tubes) whereas in 1932 the estimated total dollar volume of the radio industry is one hundred thirty-seven million dollars (based on sale of two and one-half million sets at average price of $55, including tubes).

In 1929, he stated, there were 40,000 radio dealers in the United States. Now there are less than 10,000, and this number is diminishing rapidly.

Mr. Klugh said that radio manufacturers estimated that a five per cent sales tax on radios would result in a 20 per cent loss in sales. This would force the price up, which would again reduce the sales volume, effecting a vicious circle.

He called attention to the value of the radio in police work, in directing air travel, in mobilizing the nation at wartime, and in aiding public officials campaign for office and reach their constituents.

James M. Skinner, president of the Philadelphia Storage Battery Co. (Philco), said that the number of radio manufacturers had been reduced from more than 300 in 1929 to less than 150 today.

"Pleasure is necessity in these trying days," he observed. "And the radio provides the cheapest form of entertainment available to the American family today."

George Graham, vice president of the Rockne Motors Corp., and spokesman for the National Automobile Chamber of Commerce, averred that "the automobile industry is sicker today than it has ever been since its start."

Some of the "sick" men present at the hearing (and looking the part), were Alfred Sloan, president of the General Motors Corp.; Walter Chrysler, president of the Chrysler Motor Co.; Edsel Ford, president of the Ford Motor Co.; Roy Chapin, chairman of the board of the Hudson Motor Co.; and Charles Hastings, chairman of the board of the Hupp Motor Co.

It was estimated that fifty million dollars would be raised through a three per cent tax on manufacturers sales of passenger cars, two per cent on trucks, and one per cent on tires, parts, and accessories should the Senate adopt the revenue bill passed by the House.

"Earnings," declared Mr. Graham, "fell from $330,000,000 in 1929, and $155,000,000 in 1930 to $66,000,000 in 1931, the figures not including the Ford Co.

"Only the courage and optimism of our manufacturers," Graham asserted, "have kept the business going.

"On the present volume, few automobile manufacturers will be paying dividends by the end of 1932. The automobile industry, famed for its marvelous conceptions and constructions, is lower than it has been since it started its great upward climb.

"Our volume fell from 5,358,000 vehicles in 1929 to 2,389,000 in 1931, a reduction of approximately 55 per cent.

"Even worse has been the start for 1932. The five-year average for March is 323,604 cars, as against 116,076 cars this year, a decrease of 64 per cent. We have fallen off 40 per cent against March of last year, when we shipped 192,118 cars."

Questioned by Senator Couzens, Republican, Michigan, Graham said his firm has been forced to cut salaries.

"If this continues is there not likely to be a still further curtailment of business?" asked Senator Couzens.

"Yes, sir," replied Graham, remarking that many cars are sold to the manufacturer's own employes.

Replying to other questions, Graham said that as soon as the federal budget is balanced—provided the motor vehicle tax is not imposed—the industry believes a general business upturn will begin.

Harvey L. Cobb of Washington, general counsel of the American Motorists' Association, opposed the tax from the standpoint of the automobilist, saying it would be "felt in every home throughout the nation."

Ernest N. Smith of Washington, executive vice president of the American Automobile Association, emphasized the amount of taxes already imposed on the motorist by federal, state, county or municipal authorities.

According to figures produced by Mr. Smith, at the end of seven years (average life of a motor car), the motorist has paid 120 per cent in various taxes on his investment; and at the end of that time he has nothing left to show for his money.

In states with high gasoline taxes, motor car registrations have dropped badly, Mr. Smith stated. The addition of a sales tax would again materially reduce these registrations, he predicted.

Use facts, *not guesses*

. . . to adjust complaints

EVERY so often you will find a housewife who isn't satisfied with the refrigerator you sold her. According to her complaint, the temperature isn't cold enough, or the refrigerator doesn't freeze fast enough. Sometimes it's the motor that's running wild.

Well, no matter what the complaint, a good rule to follow is never to argue. Instead, get her to let you install one of BRISTOL'S Model 144T Time and Temperature Recorders. Find out what the temperature in her refrigerator actually is, and how often and how long the motor really does run.

BRISTOL'S Model 144T Time and Temperature Recorder, for recording continuously for 24 hours (or 3 days if preferred) both refrigerator temperature and "on" and "off" motor periods on one chart.

There's nothing like adjusting complaints with facts. And Model 144T gives facts which are convincing. Bulletin 381 is the one to write for.

THE BRISTOL COMPANY, WATERBURY, CONNECTICUT

Branch Offices: Akron, Birmingham, Boston, Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis, San Francisco

TRADE MARK

BRISTOL'S

REG. U. S. PAT. OFF.

TIME AND TEMPERATURE RECORDERS *for Refrigerators*

RUTHENBURG SPEAKS AT SENATE HEARING

(Concluded from Page 4, Column 5)

has extended the work of the federal, state, and municipal governments by impressing the vital importance of food protection on the minds of the public.

This industry, with millions spent in education through advertising and other mediums, has helped to increase the effectiveness of the government's insistence upon pure foods.

Fundamentally, the mechanical refrigeration industry, and the government health bureaus are contributing to the achievement of the same results.

In view of this, can mechanical refrigeration fairly be considered a luxury?

Can Foods for Protection

Foods are canned to protect them from putrefaction. Canning achieves the same results as mechanical refrigeration. It is merely another means for protecting the health of the public.

Canners use heat to destroy the dangerous microbes in foods. Mechanical refrigerators use cold to halt the growth of these parasites.

"Not alone does a low temperature such as that obtained in a mechanical refrigerator reduce, or at least curb, the growth of putrefactive bacteria," wrote Dr. W. L. Mallmann, famed bacteriologist of Michigan State College. "It also has a marked effect on disease-producing bacteria. The longer foods are kept in a mechanical refrigerator, the fewer disease bacteria do they contain."

So far as known, no luxury tax is contemplated on canned foods. Since canning and mechanical refrigeration both protect the public's health, can one method fairly be called a luxury and taxed, while the other escapes this handicap?

The present plans, we understand, are also to exclude ice cabinets from taxation. instead of a cooling unit automatically kept cold by a condensing unit, they use ice as a source of refrigeration. But the purpose is just the same. They also are intended for the protection of foods.

Ice Refrigerator Excluded

If the ice refrigerator is not in the luxury class, is it fair to tax a mechanical refrigerator, which really fulfills the purpose for which it is designed?

The mechanical household refrigerator affords the best means so far discovered of maintaining suitable temperature conditions for the proper preservation of perishable foods. Older means for household refrigeration are relatively faulty because they allow temperatures to rise dangerously high and they are not automatic in their operation.

The mechanical refrigerator is an instrument of thrift because, compared with less modern food preservation mechanisms, the mechanical refrigerator accomplishes the following results:

(1) Economy in cost of operation.

(2) Prevention of food losses.

(3) The householder, having adequate and efficient means for food storage and preservation, need purchase perishable foods only when the lowest prices are offered.

(Exhibit "E" is U. S. Department of Agriculture, Farm Bulletin No. 602, dealing with the preservation of milk. Exhibit "F" is an excerpt from Farm Bulletin No. 602 indicating the rapid growth of bacteria at temperatures above 50 degrees. Exhibits "G" and "H" are graphic presentations showing bacteria growth at various temperatures.)

Unemployment Increase

(g) Reduced volume in the industry will increase unemployment.

A canvass of the companies here represented indicated that they give employment to approximately 180,000 people. Any factor which tends to reduce activity in this industry will aggravate the already serious problem of unemployment.

(h) The proposed tax will adversely affect allied industries.

The mechanical refrigeration industry has, during this period of general depression, contributed a considerable volume of business to other industries which are suffering most seriously from curtailed volume, heavy losses and unemployment.

According to estimates recently made by the publishers of Electric Refrigeration News, the volume contributed by the mechanical household refrigeration industry to a few of these industries is as follows:

Iron and steel, 150,000 tons.

Copper and brass, 25,000 tons.

Electric motors and electric controls $15,000,000.

To these figures might be added purchases of important volume from the lumber industry, from the insulation industry, from the paint industry, and from many others. In the aggregate, this volume purchased by the refrigeration industry from allied industries, represents the annual employment of many thousands of people and the motivation of large sums of money which must tend, in some measure, to alleviate the distress brought about by unsettled economic conditions.

Any curtailment of the refrigeration industry naturally will be reflected in those industries which act as suppliers to refrigerator manufacturers.

Electric Current Consumption

Electric current is a commodity purchased by 20,441,249 families in the United States. It is reliably estimated that this represents 68 per cent of the homes in this country. Any development that tends to reduce the cost of electric current used in the homes of this country must, therefore, be regarded as a well distributed blessing.

Mechanical household refrigerators are making it possible for the public utilities to generate and distribute electric current to domestic users at reduced cost.

The electric refrigerator adds greatly to the connected household load, and the load characteristics are such as greatly to reduce the cost of generating and distributing household current.

It is said that in many wired homes an electric refrigerator virtually doubles the current demand, and in a given community the demand created by electric refrigerators is a constant one throughout the 24-hour period and does not fluctuate seriously throughout the 12 months of the year.

A connected load of this type permits public utilities to generate and distribute electric current at lower cost than that which obtains in connection with the lighting load alone.

Any curtailment in the volume of the mechanical refrigeration industry will delay a process which ultimately must result in reduced cost for electric current bought by the home owners of America.

(Exhibit "I" is a reproduction of an editorial which appeared in Electric Refrigeration News of April 13th analyzing the distribution of money brought about by the refrigeration industry.)

Cabinet Should Not Be Taxed

(i) Refrigeration cabinets should not be taxed.

No tax is proposed upon ice or ice boxes. This again emphasizes the discriminatory nature of the proposed tax.

There is no essential difference in construction between an ice box and a mechanical refrigerator cabinet—in fact, thousands of ice boxes have been converted into mechanical refrigerators. Under the proposed revenue bill a home owner could purchase an ice box not subject to tax and convert it into a mechanical refrigerator by purchasing the necessary mechanical elements.

In this way the tax can be partly evaded. Such evasion will reduce the volume of the mechanical refrigeration industry and bring about a serious element of confusion.

Should Not Exceed Auto Tax

(j) The tax, if imposed, should not exceed that proposed for automobiles.

In the entire tax schedule the only other item listed that is not generally regarded as a luxury is the automobile. It is proposed to tax automobiles three per cent. If a tax must be borne by the mechanical refrigeration industry, there is no apparent reason why it should be higher than the tax proposed for automobiles.

Summary

In the proposed revenue bill, mechanical refrigeration is classed as a luxury. It has been shown that the industry cannot reasonably be so classified.

Under the proposed revenue bill, mechanical refrigeration industry is assumed to be a money-making industry. It has been shown that this is not generally true.

The process of developing this new industry must depend upon constantly reduced prices. This process should not be retarded by a discriminatory tax.

It has been shown that this tax is discriminatory in that it is placed upon only one of many utilitarian household devices. It is also discriminatory in that it is levied against one division of the refrigeration industry, whereas no tax is levied against competitive divisions of the same industry.

There is no apparent justification for taxing the mechanical refrigeration industry at a higher rate than that which applies to the automobile industry.

The people engaged in the mechanical refrigeration industry are fighting to create and develop a new and useful industry, the other industries selected to bear the tax are comparatively old and well-established.

This committee is prepared to submit any additional substantiating evidence that may be required. We shall welcome the opportunity of supplying any additional information concerning our industry that may be helpful to the Senate Finance Committee.

Conclusion

In view of the foregoing facts, we respectfully suggest that:

A general manufacturers' sales tax, in which this industry would gladly bear its fair share, be reconsidered.

If the first suggestion cannot be adopted, that mechanical household refrigerators be eliminated from the selective tax schedule.

If neither of the foregoing suggestions can be adopted, that the tax levied against mechanical household refrigerators shall not exceed two and one-quarter per cent.

If a selective tax is levied against mechanical household refrigerators, it shall apply only to the mechanism and not in any case to the cabinet in which the mechanism may be assembled.

Respectfully submitted,

LOUIS RUTHENBURG,
Chairman, Refrigeration Division,
National Electrical Manufacturers Association.

April 18, 1932.

Tax Bill

TITLE IV—MANUFACTURERS' EXCISE TAX

Sec. 608. Tax on Mechanical Refrigerators.

There is hereby imposed upon the following articles, sold by the manufacturer, producer, or importer, a tax equivalent to 5 per centum of the price for which so sold:

(a) Household type refrigerators (for single or multiple cabinet installations) operated with electricity, gas, kerosene, or other means (including parts or accessories therefor sold on or in connection therewith or with the sale thereof).

(b) Cabinets, compressors, condensers, expansion units, absorbers, and controls (hereinafter referred to as "refrigerator components") for, or suitable for use as part of or with, any of the articles enumerated in subsection (a) (including in each case parts or accessories for such refrigerator components sold on or in connection therewith or with the sale thereof) except when sold as component parts of complete refrigerators or refrigerating or cooling apparatus. Under regulations prescribed by the Commissioner, with the approval of the Secretary, the tax under this subsection shall not apply in the case of sales of any such refrigerator components by the manufacturer, producer, or importer to a manufacturer or producer of refrigerators or refrigerating or cooling apparatus. If any such refrigerator components are resold by such vendee otherwise than on or in connection with, or with the sale of, complete refrigerators or refrigerating or cooling apparatus, manufactured or produced by such vendee, then for the purposes of this section the vendee shall be considered the manufacturer or producer of the refrigerator components so resold.

Sec. 616. Definition of Sale.

For the purpose of this title, the lease on an article shall be considered the sale of such article.

Sec. 617. Retail Sales.

If any manufacturer, producer, or importer liable under this title for tax based on the price for which any articles are sold by him customarily sells such articles both at wholesale and at retail, the tax in the case of any article sold by him at retail shall be computed on the price for which like articles are sold by him at wholesale.

Sec. 618. Sales for Less than Fair Market Price.

If any person sells an article to any person (otherwise than through an arms-length transaction) at less than the fair market price, the tax under this title on the sale of such article shall (if based on the price for which sold) be computed on the fair market price of such article.

Sec. 619. Contracts prior to March 1, 1932.

(a) If (1) any person has, prior to March 1, 1932, made a bona fide contract with another person for the sale, after the tax takes effect, of any article in respect of the sale of which a tax is imposed under this title, or in respect of which a tax is imposed under this subsection, and (2) such contract does not permit the adding to the amount to be paid under such contract, of the whole of such tax, then the vendee shall, in lieu of the vendor, pay so much of the tax as is not so permitted to be added to the contract price.

(b) The taxes payable by the vendee shall be paid to the vendor at the time the sale is consummated, and shall be collected, returned, and paid to the United States by such vendor in the same manner as provided in section 702.

Sec. 620. Return and Payment of Manufacturers' Taxes.

(a) Every person liable for any tax imposed by this title on sales by him (except tax under section 615, relating to tax on soft drinks) shall make monthly returns under oath in duplicate and pay the taxes imposed by this title to the collector for the district in which is located his principal place of business or, if he has no principal place of business in the United States, then to the collector at Baltimore, Md. Such returns shall contain such information and be made at such times and in such a manner as the Commissioner, with the approval of the Secretary, may by regulations prescribe.

(b) The tax shall, without assessment by the Commissioner or notice from the collector, be due and payable to the collector at the time so fixed for filing the return. If the tax is not paid when due, there shall be added as part of the tax interest at the rate of 1 per centum a month from the time when the tax became due until paid.

Sec. 621. Applicability of Administrative Provisions.

All provisions of law (including penalties) applicable in respect of the taxes imposed by section 600 of the Revenue Act of 1926, shall, insofar as applicable and not inconsistent with this Act, be applicable in respect of the taxes imposed by this title.

Sec. 622. Rules and Regulations.

The Commissioner, with the approval of the Secretary, shall prescribe and publish all needful rules and regulations for the enforcement of this title.

Sec. 623. Effective Date.

This title shall take effect on the fifteenth day after the date of the enactment of this act, except that section 622, relating to rules and regulations, and this section, shall take effect on the date of the enactment of this Act. No sale or importation after June 30, 1934, shall be taxable under this title.

Other sections under Title IV—Manufacturers' Excise Tax, treated the following subjects: additional duty on imported products; taxes on toilet preparations, furs, jewelry, automobiles, boats, radio receiving sets, firearms, shells and cartridges, cameras, matches, candy, chewing gum, and soft drinks.

Recognized as a Powerful Sales Asset

Nation-wide Use . . . the result of Factory Performance Tests

The efficiency of the LARKIN COIL principle was, quite naturally, demonstrated to the entire satisfaction of the manufacturers whose trade-marks are shown above before LARKIN COILS were adopted as Standard Factory Equipment.

So unusual is the LARKIN COIL principle that the ganging of coils is unnecessary. It is a positive space saver, and a marvel of efficiency.

93
STANDARD SIZES
with over
6000
INSTALLATION COMBINATIONS

over 30,000 Daily Demonstrations in Finer Coil Service

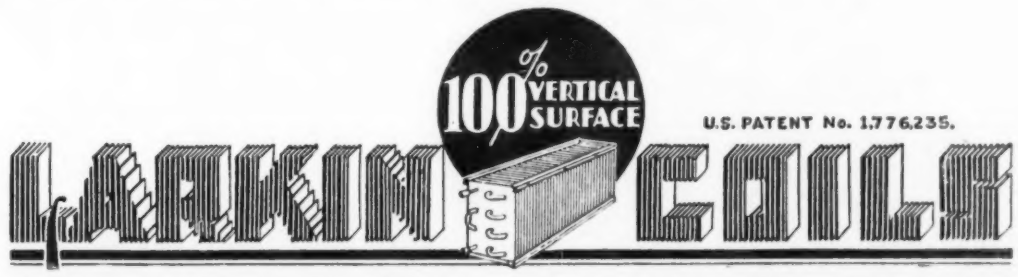
Solve these problems and the sale of Commercial Electric Refrigeration is speeded.

Solve the problem of *excessive* Dehydration which results in spoilage and food weight loss . . . Solve the problem of *excessive* shutdowns for Defrosting coils . . . Show the prospective user the economy of a *minimum* of costly servicing and you have offered three *absolute essentials* to success.

The LARKIN 100% Vertical-Surface Aluminum Plate COIL is the answer. Proof lies in over 30,000 daily demonstrations of its contributes to finer, lower cost service and efficiency.

LARKIN COILS demonstrate daily their great value to the manufacturer, distributor, dealer and user.

Facts and data from any manufacturer listed here or direct.



LARKIN-WARREN REFRIGERATING CORPORATION
Originators and Manufacturers ATLANTA, GA.

Through a Woman's Eyes

By Gertrude Stanton

Two Yarns

At the NELA home service conference, reported in full in the last issue, a number of amusing tales were told by delegates of incidents arousing out of their manifold duties. Some home service women, it developed, even aid and abet the service department. We quote two yarns:

A new user in New York reported to the dealer from whom she purchased her refrigerator that she couldn't get her machine to freeze ice cubes. Was the food compartment temperature satisfactory? Perfect.

The home economist knit her forehead, then remembered that in some localities the mineral properties of the water cause it to freeze slowly.

"Where do you live?" the customer was asked.

"Scarsdale."

"Well is there anything in the water which might . . ."

"Water!" the customer interrupted. "Do you need water? The salesman told me this refrigerator would freeze ice cubes automatically!"

A similar story was told about a woman whose refrigerator would not freeze desserts.

The home economist questioned every ingredient of the dessert, and finally by chance discovered that the woman had put her mixture into the glass drip pan instead of into an ice cube tray.

* * *

Mystery Drama

Recently I had the opportunity of visiting the National Broadcasting Co. studios at the time that the G. E. Home Circle broadcast was going on. There was a thrill, to begin with, in visiting the N-B-C studios, and the thrill that everyone not used to radio procedure never fails to get.

A chapter of the G.E. mystery drama was given, and the characters went through five minutes of dramatic action. The man who has charge of the "effects" was busy. A mystery drama entails a gale of wind blowing; perhaps a little bit of thunder. The man had a machine for each, and turned the cranks furiously. A door had to be banged. He banged it. Someone knocked furiously. He had to knock.

We were interested in knowing just how much action really takes place in these radio playlets. In this particular chapter two characters struggled with one another. Here is how it was done:

The man stood at one microphone, and about 10 feet from him the woman stood at another microphone. "Let go of me," she gasped, and groaned, and otherwise made the sounds that would be made if she had actually been trying to escape from the man's grasp. Across the room from her the man stood, gasping and groaning into his own microphone with the effort of holding the struggling woman.

Another interesting thing discussed by a representative of the advertising firm which handles the General Electric radio programs was the subject of Grace Ellis.

The pictured Grace Ellis—the attractive and house-wifely woman with hair parted in the middle, and the lovely smile—who appears in the advertisements, is not the Grace Ellis whose voice comes over the radio programs.

The voice belongs to a younger woman—a tall, red-haired, beautiful girl. Grace Ellis, it was thought, must appear more like a matron than like a girl. So another woman was photographed. The voice as it comes over the radio, and the picture, really go remarkably well together. Listen for it sometime.

* * *

Across the Back Fences

The husband who—by some terrible mistake—arrives home before his wife's afternoon party is over, and who tiptoes carefully up the stairs to a secluded spot until the guests leave, may get very humorous with his wife at dinner that evening.

He may speak of a crows' convention, or "you women with your gossiping" little knowing that each group is in a conference which went unrecognized because of the lack of cigars.

Here at this modern equivalent of the back fence, household problems are gone over in detail. The telephone number of the Woman who Cleans is written down on the back of a tally. The doctor who took out Adelaide's tonsils is praised (and thereby gets another client).

The owner of the electric refrigerator is asked—and is glad to tell—just what is right and what is wrong about her purchase.

The salesman who knows what Mrs. Brown has already heard about electric refrigeration when she comes into his showroom has the opportunity of telling her what she wants to hear, and may have answers to her possible objections already mapped out.

* * *

Cold Canvass

Choosing a street on which the homes looked electric refrigeration conscious, I recently did a little cold canvassing to find what users are saying about their refrigerators.

Not counting the houses at which no one answered the bell, there were 15 homes. All but three of these had electric refrigeration. This is a section not of mansions, but of substantial homes with two-car garages, and a section in which the doorbell-ringer is met usually by a servant.

The makes represented were: Copeland 1; Electrolux 1; Frigidaire 2; General Electric 3; Kelvinator 2; and Norge 1.

At two of the homes maids with instructions that their mistresses were not in met me at the door.

Both of these were asked what kind of refrigerator they used. One offered to go back to the kitchen and see. She returned to say that she couldn't find the name on it anywhere. How did it look? "Well, it's a great big refrigerator . . ."

The other gave one bit of information—that the refrigerator was four or five years old, but she did not know what make it was, and didn't care to go back and see. This refrigerator was the oldest of any of the 12.

* * *

Satisfied Users

If what the women said is true, service men must lead an easy life. Most of the women seemed not only pleased, but enthusiastic, over their refrigerators. They had to be prodded a bit to think of things which the refrigerator did (or failed to do) of a disappointing nature.

Three had never had a service man in the house. The others reported one, two, or three calls in the period of time they had had their machines. One woman told of a "terrible experience:" the refrigerator went wrong one Sunday, just before dinner. A service man was called, and in the meantime dinner was served to the family and some guests.

In the middle of dinner the dining room filled with "the awfullest smell," which drove them away from the table. Finally they took their guests and went out for the rest of the meal. This woman said her machine "didn't get cold enough."

* * *

No Money Saved

In spite of all the sales talks and films on saving money through quantity buying and left-over utilization, I couldn't get much of a rise out of the question "Do you find that your refrigerator saves money for you?"

On the contrary, most of the women rather raised their eyebrows in surprise at such a question, and considered the matter carefully before they said, "Not particularly," or "No, I haven't noticed it."

The one woman who responded at any length to the question said that she appreciated being able to leave for the week-end and still keep her refrigerator well-stocked.

None of them said that they had changed their marketing habits in any way since their purchase of a refrigerator.

* * *

A Few Complaints

Only one woman thought that her refrigerator made too much noise. Two thought that their coils needed defrosting much too often. One woman thought her machine made ice cubes too slowly, but this was not a valid complaint, as inquiry showed that her machine made ice cubes as fast as any self-respecting refrigerator should.

Two housewives reported that they never had tried cold cookery of any sort. They use the refrigerators for storing foods only, and do not make any of their own frozen desserts or salads. Perhaps in homes where women do most of their own work more interest would have been shown in this phase of the electric refrigerator's service.

One woman reported poor results with her desserts, saying that they got too hard, and that fruits became veritable lumps of ice when included in the recipes.

Hoping to find some new use of the refrigerator, I asked the women if they got any special service out of their equipment. One woman liked being able to use decorated ice cubes for parties. Another used ice cubes for a beauty aid, reporting that the smooth sides of the cube made it more satisfactory for rubbing over the face than ordinary, jagged bits of ice. Another mentioned keeping flowers fresh in her refrigerator.

* * *

The Other Three

Of the three who did not use electric refrigeration, one woman cited the cost of the machine as her reason for not buying one. The other two expected to get one some time. One reported that she hadn't thought much about it.

The other, when asked how she would go about choosing one, reported that she had several friends who owned various makes, and that she would first ask them how they liked their refrigerators. She had no particular make in mind, she said, but would want one that "you hear something about."

* * *

Servel Wives Help Out

Retail salesmen and executives of the Santa Barbara (Calif.) Music Co., Servel dealer, have a method of getting the reaction of housewives to their sales talks which they think is a good one.

Not long ago they invited their wives to a sales meeting, and the women listened with the salesmen to the discussion of sales features of Servel.

W. T. Wyatt, Servel district sales representative, made a talk on electric refrigeration in general, to familiarize the women with its history, then discussed at length the selling points of the Servel Hermetic.

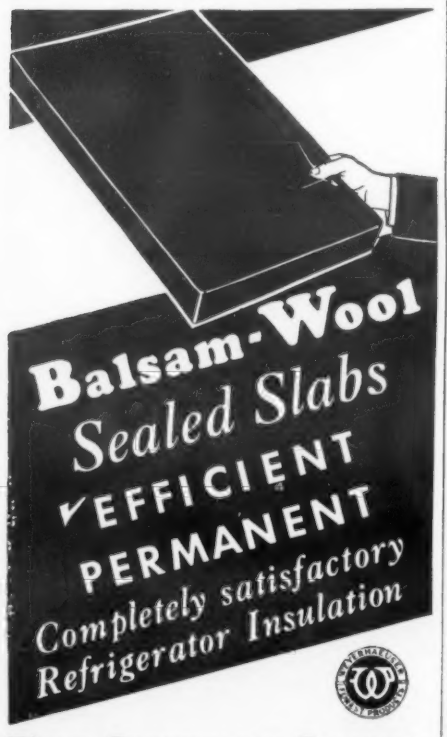
After this part of the meeting, the wives told their reaction to the various presentations, and the salesmen reported that a number of helpful points were brought out by their guests.

FULCO Refrigerator COVERS

Insure deliveries without scratched or broken enamel. Write for prices.

Fulton Bag & Cotton Mills

THE IMITATION FOOD PRODUCTS CO.
107 Lawrence St. Brooklyn, N.Y.
Ask for catalog of March, 1932
30 Items in 1924—175 Now
We are proud of our eight years record
Many favorable comments. No complaints
Refrigerator assortments:
Get-Acquainted Set—6 pieces $4.15
A—15 pieces $9.15 B—25 pieces $14.45
C—30 pieces $19.80



WOOD CONVERSION COMPANY
Industrial Sales Offices:
CHICAGO, 360 N. MICHIGAN AVE.
New York, 3107 Chanin Bldg;
Detroit, 515 Stephenson Bldg;
San Francisco, 149 California St.

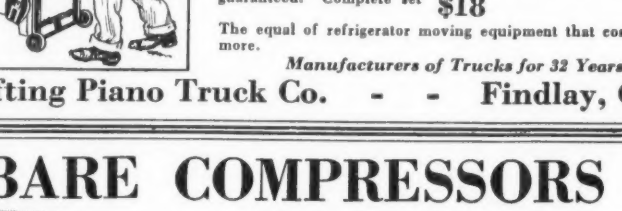
BUYER'S GUIDE

Manufacturers Specializing in Service to the Refrigeration Industry

SPECIAL ADVERTISING RATE (this column only)—$12.00 per space.
Payment is required monthly in advance to obtain this special low rate.
Minimum Contract for this column—13 insertions in consecutive issues.
All advertisements set in uniform style of type with standard border.
Halftone engravings of 100-line screen, either outline or square finish.
No reverse cuts or heavy black effects. No charge for composition.

KASON K-54A REFRIGERATOR LATCH

Pat. Des. No. 81737
Other Patents Pending



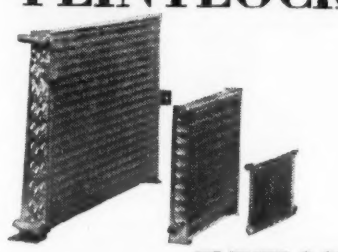
1932 MODEL

Send for Samples on Approval

Furnished with Inside Handle

Kason Hardware Corp., 61-67 Navy St., Brooklyn, N. Y.

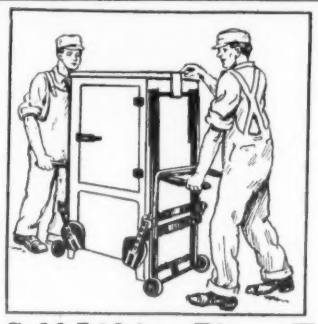
FLINTLOCK CONDENSERS



FOR EXTRA CAPACITY WITH GREATER EFFICIENCY

Used as standard equipment by over 65% of the leading electric refrigerator manufacturers.

FLINTLOCK CORPORATION
4461 WEST JEFFERSON DETROIT, MICHIGAN



The Lowest Priced Refrigerator Trucks on the Market!

FINDLAY REFRIGERATOR TRUCKS

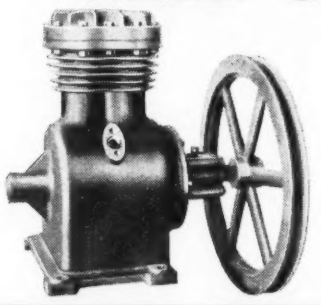
The only practical trucks at this unheard of price level. Save one man on deliveries. Make heavy lifting easy—quick. Eliminate damage to cabinets—floors—walls. Fit all cabinets with legs. All-steel frame. 4" rubber tired wheels. Only pads touch cabinet. Sturdy construction. Satisfaction guaranteed. Complete set $18

The equal of refrigerator moving equipment that costs $10.00 more.

Manufacturers of Trucks for 32 Years

Self-Lifting Piano Truck Co. - - Findlay, Ohio

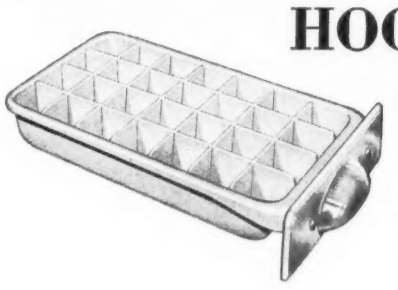
BARE COMPRESSORS



New 1/6 H. P. Twin 1¼" x 1¼"
For Sulphur Dioxide or Methyl Chloride
Other Sizes 1/6 H. P. to 50 H. P.
"PARKER" Refrigeration Since 1899

H. C. PARKER, LTD.
2600 Santa Fe Ave. (Factory), Los Angeles, California
510 Larkin Street, San Francisco, California
392 Clifton Ave., Newark, New Jersey

HOOSIER PARTS



Complete — Assembled — Packaged — Ready for shipment in your Refrigerator. Typical 28-cube tray shown is aluminum with patented Alumilite Anodic treatment and chrome plated handle—size overall 5 11/16" wide by 10 1/4" long by 1 5/8" deep with 6 7/16" x 1 15/16" Handle. Many other sizes and styles. Write for details.

Dessert Trays - Defrosting Pans

HOOSIER LAMP & STAMPING CO., EVANSVILLE, IND.

Electrical Refrigeration Parts and Supplies

We Carry in Stock:

COMPRESSORS—EVAPORATORS—THERMOSTATS—VALVES AND FITTINGS—THERMOSTATIC AND AUTOMATIC EXPANSION VALVES—COPPER TUBING—CONTROLS—AND MANY OTHER PARTS

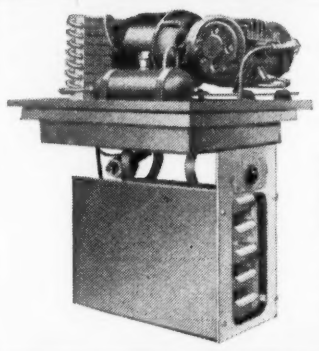
Melchior, Armstrong, Dessau Co.
116 Broad Street, Telephone Bowling Green 9-8870, New York, N.Y.

The 1932 Refrigeration Directory and Market Data Book

470 pages of facts, figures and names—the most complete statistical data and buying information ever compiled for the refrigeration industry. An invaluable reference book for sales, engineering, and purchasing executives; for distributors, dealers, salesmen and servicemen.

$2.00
Postpaid in U.S.
Foreign postage, 50 cents extra.

BUSINESS NEWS PUBLISHING CO.
550 Maccabees Bldg., Detroit, Mich.



SURE COLD

New Top Drop-In Unit

Only three moving parts. Double shaft seal; rings on pistons; Reed valves; 1/5 h.p. motor; finger tip control; 3 to 7 ice trays.

Designed to give long-time, trouble-free refrigeration. Here's what quantity buyers wishing a good product have been wanting.

The Warner Steel Products Co.
Ottawa, Kans., U.S.A.

Fruit & Vegetable Baskets
Mechanical Springs
Wire Food Shelves

We give prompt service and excellent workmanship.
Send us your inquiries.

L. A. YOUNG SPRING & WIRE CORP.
9200 Russell St. Detroit, Mich.

A big waiting market for
Commercial Refrigeration Equipment

BOTTLE COOLERS

Five Models for Your Commercial Compressor Units.
NOW is the season to "cash in" on this sure market.
Ask for Special Catalog "R"

S & S PRODUCTS CO. 15 Ree St. LIMA, OHIO
Exclusively Bottle Cooler Manufacturers

SHOW YOUR REFRIGERATORS "IN ACTION"

USE OUR FOOD REPRODUCTIONS

Demonstrate Capacity. Attract Attention

Introductory Set. Specially Priced

$10.00 Net

Send for Catalogue

Reproductions Company, 210 South St., Boston, Mass.

YOUR ADVERTISEMENT

in this Buyer's Guide Column will be seen by distributors, dealers and refrigerator manufacturers throughout the entire world.

SPECIAL LOW RATES

make it easy to keep industry buyers constantly informed of your products and service.

Electric Refrigeration News
550 Maccabees Bldg. Detroit, Mich.

Subscribe Now and Save Money

Special Offers

Note—Combination rates are for United States only.

COMBINATION OFFER No. 1
Electric Refrigeration News 1 Year and Directory and Market Data Book
Combination Price $4.00. Saves You $1.00

COMBINATION OFFER No. 2
Electric Refrigeration News 2 Years and Directory and Market Data Book
Combination Price $6.00. Saves You $2.00

COMBINATION OFFER No. 3
Refrigerated Food News 1 Year and Directory and Market Data Book
Combination Price $2.00. Saves You $1.00

COMBINATION OFFER No. 4
Refrigerated Food News 1 Year and Electric Refrigeration News 1 Year
Combination Price $3.50. Saves You $.50

COMBINATION OFFER No. 5
Directory and Market Data Book and Electric Refrigeration News 1 Year and Refrigerated Food News 1 Year
Combination Price $4.50. Saves You $1.50

COMBINATION OFFER No. 6
Directory and Market Data Book and Electric Refrigeration News 17 Weeks
Combination Price $2.00. Saves You $1.00

Group and Foreign Rates

UNITED STATES and Possessions and Pan-American Postal Union Countries.

	Electric Refrigeration News	Refrigerated Food News	Both Papers
1 Subscription	$3.00	$1.00	$3.50
5 or more, each	2.75	.95	3.25
10 or more, each	2.50	.90	3.00
20 or more, each	2.25	.85	2.75
50 or more, each	2.00	.80	2.50
CANADA (Prices include tariff charge of 5c a copy)			
1 subscription	$6.00	$2.00	$7.00
5 or more, each	5.75	1.95	6.75
10 or more, each	5.50	1.90	6.50
20 or more, each	5.25	1.85	6.25
50 or more, each	5.00	1.80	6.00
ALL OTHER COUNTRIES			
1 subscription	$4.00	$1.50	$5.00
5 or more, each	3.75	1.45	4.75
10 or more, each	3.50	1.40	4.50
20 or more, each	3.25	1.35	4.25
50 or more, each	3.00	1.30	4.00

1932 REFRIGERATION DIRECTORY AND MARKET DATA BOOK
In United States, $2.00 a copy, postpaid.
In all other countries, $2.50, postpaid.

BUSINESS NEWS PUBLISHING CO., ...1932
550 Maccabees Bldg., Detroit, Mich.

☐ Enclosed is remittance for $.....
☐ Please enter my order for COMBINATION OFFER NO.....at $.....
☐ Enter subscription to Electric Refrigeration News ☐ 1 Yr. $3.00. ☐ 2 Yrs. $5.00.
☐ Enter subscription to Refrigerated Food News ☐ 1 Yr. $1.00. ☐ 2 Yrs. $1.50.
☐ Send 1932 Refrigeration Directory and Market Data Book. $2.00 per copy.

Name .....

Address .....

City..... State.....

4-20-32

REQUESTS FOR INFORMATION

Please refer to the 1932 Refrigeration Directory and Market Data Book for a complete list of all manufacturers of refrigeration equipment, parts, materials, supplies and accessories; also for all available statistical data on sales of refrigeration equipment, distribution methods, etc.

To obtain a copy of this book send $2.00 to Business News Pub. Co., 550 Maccabees Bldg., Detroit, Mich.

Advertisers will be given preference in published answers to requests for buyer's guide service, but a complete list of all known suppliers will be mailed if stamped, self-addressed envelope is enclosed with inquiry.

Readers who can be of assistance in furnishing correct answers to inquiries, or who can supply additional information, are invited to address Electric Refrigeration News, mentioning query number.

Vegetable Crispers

Query No. 731—"Kindly advise us where we can buy a crisperator, and at what figures."

Answer—Federal Enameling & Stamping Co., Thompson Ave., McKees Rocks, Pa., advertises in this issue. See page 341, 1932 Refrigeration Directory and Market Data Book, for complete list.

Ice Box Production

Query No. 732—"We are very anxious to get the production figures on ice boxes broken down into each year for the last 10 years."

Answer—Production figures for the last 20 years appear on page 39 of the 1932 Refrigeration Directory and Market Data Book.

Arctic-Air Refrigerator Co.

Query No. 733—"We have an inquiry from the Arctic-Air Refrigerator Co., Bridgeport, Conn., and we would like to know whether or not you can give us any information about this concern. We replied to their letter but it came back to us on account of insufficient address."

Ranco Controls

Query No. 734—"We would appreciate if you could advise us the name of the manufacturer of the temperature control known by the name of Ranco."

Answer—Automatic Reclosing Circuit Breaker Co., 1304 Indianola Ave., Columbus, Ohio.

Thermometer Manufacturers

Query No. 735—"We are interested in buying some commercial refrigerator thermometers, and would appreciate it very much if you could advise us where we could get these."

Answer — Bristol Co., Waterbury, Conn., advertises in this issue. For complete list, see 1932 Refrigeration Directory and Market Data Book, page 365.

Commercial Refrigeration

Query No. 736—"We are considering the adding of a commercial line of refrigerators to our regular retail household line, and would appreciate it very much if you will give us the name of eight or 10 leading manufacturers."

Answer—General Electric Co., Hanna Bldg., Cleveland; Kelvinator Corp., 14250 Plymouth Road, Detroit; Trupar Mfg. Co., Davis Ave., Dayton, have advertisements in this issue. For complete list, see 1932 Refrigeration Directory and Market Data Book, page 289, for commercial refrigeration systems, page 328 for commercial refrigeration cabinets.

Refrigerator Parts

Query No. 737—"Please advise if there is an independent distributor of Frigidaire parts in the United States."

Answer—Companies carrying repair parts for electric refrigerators, as well as replacement parts, appear in the 1932 Refrigeration Directory and Market Data Book, page 341.

Refrigerants

Query No. 738—"Where can I purchase calcium chloride and sulphur dioxide in small quantities? I am servicing small jobs and wish to purchase 50 lbs. of calcium chloride, and 10 lbs. of sulphur."

Answer—See sulphur dioxide advertisements in this issue of Ansul Chemical Co., Marinette, Wis.; Virginia Smelting Co., West Norfolk, Va. For complete list of suppliers of calcium chloride and sulphur dioxide, see 1932 Refrigeration Directory and Market Data Book, page 285.

Manufacturers

Query No. 739—"Please advise if you can furnish an up-to-date and complete list naming manufacturers of refrigeration and air conditioning equipment. Also interested in the leading officials' names in each case."

Answer—See 1932 Refrigeration Directory and Market Data Book.

LEONARD DEALERS MEET AT WICHITA, KAN.

WICHITA, Kan.—Lee Stratton, Leonard district sales manager, addressed a dealer meeting of the Stimpson-Philco Co., distributor, recently. More than 50 dealers attended the one-day conference.

DECREASE SHOWN IN POWER CONSUMPTION

NEW YORK CITY—The production of electricity by the electric light and power industry for the week ended Saturday, April 9, was 1,465,076,000 kwh. according to the N.E.L.A.

The Atlantic seaboard shows a decrease of 5.6 per cent from the corresponding week last year, and New England a decrease of 8.5 per cent.

The central industrial region, outlined by Buffalo, Pittsburgh, Cincinnati, St. Louis, and Milwaukee, registers a decrease of 14.8 per cent, while the Chicago district alone shows a decrease of 8.8 per cent. The Pacific Coast decline amounts to 13.8 per cent.

For January and February, the percentages of decline in the United States as a whole were 5.7 per cent and 6.1 per cent, respectively. These percentages are computed on basis of the average daily output.

NEW GIBSON DISTRIBUTOR HAS REFRIGERATOR SHOW

PITTSBURGH—The Superior Auto Accessories Co. of Pittsburgh, recently appointed distributor for Gibson electric refrigerators, closed its Gibson show in the Hotel Pittsburgher, April 14. The show opened April 10, when a sales meeting was held.

Frank S. Gibson, Jr., vice president in charge of sales; F. A. Delano, general sales manager; W. R. Marshall, advertising and sales promotion manager; H. M. Pauley, special sales representative, and Herbert E. Young, eastern district manager, attended the meeting.

Mr. Marshall also contacted the Gibson distributor at Rochester, N. Y.—H. D. MacRae, Inc.—before returning to Greenville.

LEVERETTE NAMED LEADER OF NEW BEDFORD BUREAU

NEW BEDFORD, Mass.—William E. Leverette, of the New Bedford Gas & Electric Light Co. has been elected chairman of the newly organized Electric Refrigeration Bureau, here.

Other members of the board of governors are Carl Goddard, Clayton Hawes, William Beserosky, and H. S. Waite.

Man Power Vital in House Selling

DETROIT — "In house-to-house selling, man power is the most important thing," declared Willam A. Foster, vice president in charge of sales and advertising for the Borden's Farm Products Co. of Michigan.

"The problem of selecting and training men is different today than three years ago. Today we have no experienced men. Many men formerly successful find it difficult to adjust themselves to the new conditions.

"Often a man with no experience proves better than the man who cannot readjust himself. The successful salesman today is the one who is not forever keeping in mind 'the times that used to be.'"

Trained Men Available

When in need of practical, trained shop mechanics, sales, installation or service men, patronize this FREE Placement Bureau. We have competent, trained graduates available in every locality, to meet your requirements. With or without experience. No charge to the man or to you. Write, phone or wire.

Utilities Engineering Institute
Placement Division
Dept. 442. 404 No. Wells St., Chicago

THE CONDENSER

PAYMENT IN ADVANCE is required for advertising in this column. The following rates apply:

POSITIONS WANTED—Fifty words or less, one insertion $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each. ALL OTHER CLASSIFICATIONS—Fifty words or less, one insertion $3.00, additional words six cents each. Three insertions $8.00, additional words sixteen cents each.

REPLIES to advertisements with box numbers should be addressed to the box number in care of Electric Refrigeration News, 550 Maccabees Building, Detroit, Mich.

POSITIONS AVAILABLE

SEE display advertisement in this column.

POSITIONS WANTED

REFRIGERATION expert, 14 years' experience in engineering and development work on domestic and commercial equipment, accessories and production methods. College graduate. References. Available for position as chief or consulting engineer to manufacturer in need of results. Box 437.

FOREIGN service or U. S. position desired by young American experienced with household equipment. Proven sales and executive ability, college training, pleasing personality. Willing to travel. Formerly managing director large British firm in Buenos Aires. Familiar French and Spanish. Good connections in U. S., western Europe, southern and central America. Box 439.

TO MANUFACTURERS who contemplate entering refrigeration field, there is offered the combined talents of three designers who possess necessary background in domestic compression and absorption types, cabinets and commercial display cases, mechanical and dry ice motor truck refrigeration. Box 440.

GAGE AND INSTRUMENT MAN specializing on gage design and inspection methods for high speed production; gage-room systems; tool-inspection systems; and precision work in experimental development. Successfully handled these departments for large, nationally known organization producing electric refrigerators and radios. Box 442.

REFRIGERATION SALES PRODUCER AVAILABLE. Has unusual refrigeration background in branch and dealer organizations. Has thorough grounding in refrigeration selling and that rare ability to handle outlets harmoniously and productively. Keen sales analyst, excellent producer. Should prove valuable as sales manager for large distributor or branch or district manager for manufacturer. Box 447.

FRANCHISE OPEN

VALUABLE territories open in Florida. There are some good locations still open for Westinghouse refrigerator dealers in Florida. Wire or write D. E. Brunskill, Sales Mgr., Westinghouse Electric Supply Co., Jacksonville, Fla.

EQUIPMENT FOR SALE

200 first-class compressors, 1½-in. bore, 1¼-in. stroke for Methyl Chloride or SO_2 at right price. 946 Hanna Bldg., Cleveland, O.

Executive, university gradnate, now employed, will consider new connection. Experienced in specialty merchandising. Eight years' successful record as sales manager and general manager household and commercial refrigeration. Well known with best of references. Prefers sales management or sales promotional work. Box 450, Electric Refrigeration News.

Engineer Wanted

WANTED—High-grade, competent and experienced refrigeration engineer competent to design and develop both unit and box. Excellent opening for out-of-the-ordinary man. Must have proven record of accomplishments. Replies in strict confidence. Box 448, Electric Refrigeration News.

FOR SALE

. . . AN ULTRA MODERN . . .

ELECTRIC REFRIGERATOR LINE

Fully developed, proven and ready for production.

Appeals instantly to the public and engineer alike and would strengthen the position of any present manufacturer.

Complete control can be had for less than the cost of development.

Samples on Display

Box 449

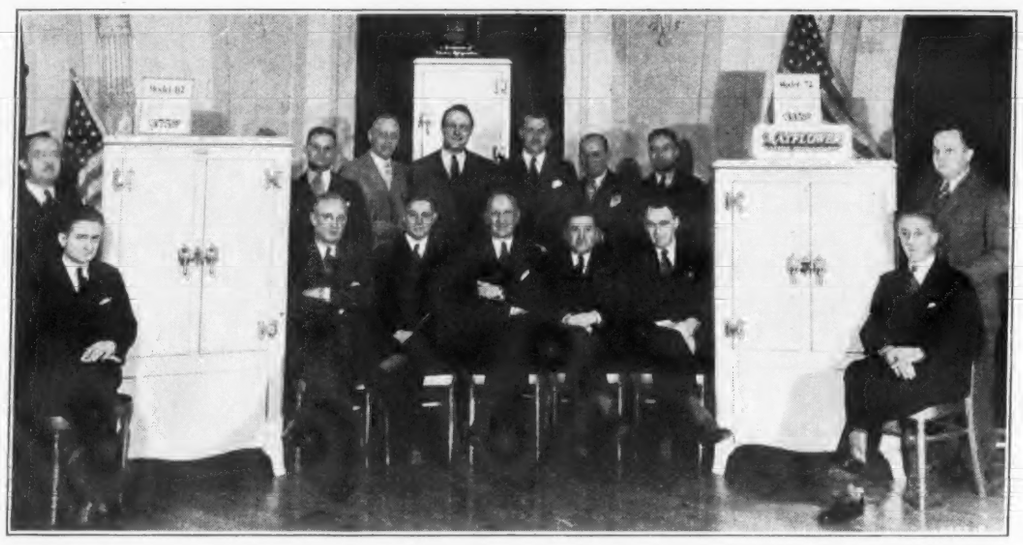
ELECTRIC REFRIGERATION NEWS
550 Maccabees Bldg., Detroit

Mayflower Sales Forces in All Sections Open Spring Drive

Beck & Gregg Hardware Co., Atlanta, distributor of Mayflower refrigerators in Georgia, South Carolina, and Florida, had this exhibit in cooperation with Haverty Furniture Co. in the recent Atlanta refrigeration show.

Average sales of this group, the personnel of the North Shore Electric Equipment Co., Lynn, Mass., average $100,000 per year. The company is distributing Mayflower refrigerators. Harry Sundberg, extreme right is general manager of the corporation, and F. L. Smith, extreme left, is sales manager.

Sales Executives in Philadelphia



Philadelphia Distributors, handling Mayflower refrigeration in the Quaker City region, presents a group of its leaders. Seated, left to right Harry Rheiner, district sales representative; Robert Bartley, sales manager; Harry J. Hunt, president, Trupar Mfg. Co., Mayflower manufacturer; Harry J. Ellis, president; Albert E. Hughes, vice president.

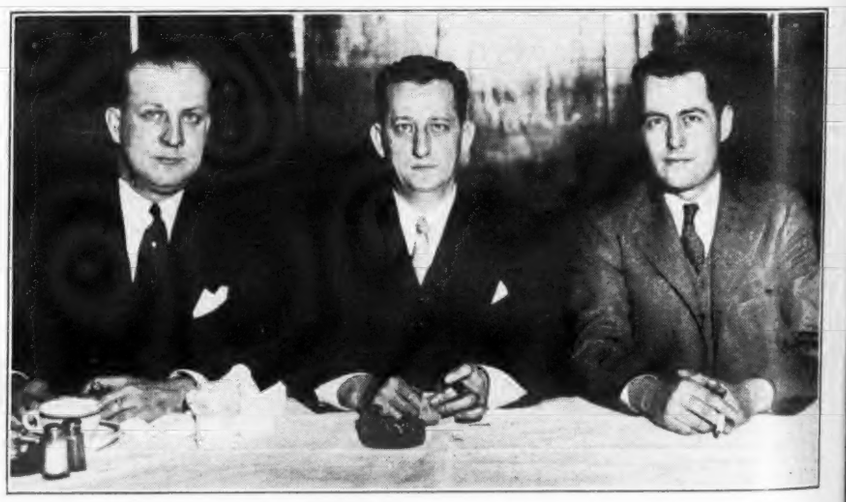
80 Carloads of Refrigerators

An order for 80 carloads of Mayflower refrigerators was recently made by Newark Distributors, Inc., Newark. In the picture are Alfred Bates, vice president, seated in the center; beside him, G. A. Tatem, secretary-treasurer of the firm. The attractive young lady is Miss Marie Bates. The company recently started Mayflower distribution in the territory.

In America's Divorce Capital

The active force of the Nevada Auto Supply Co., handling Mayflower refrigerators in the famous town of Reno, Nev. The firm has already sold enough Mayflowers to make 10 per cent of the estimated 1932 quota of electric refrigerators—all makes—for Nevada.

Down South



Picturing G. L. Richardson, southeastern representative for Trupar, W. H. Slater, general sales manager of the Haverty Furniture Co.'s 20 stores, and Herndon Thomas, manager, refrigeration department, Beck & Gregg Hdwe. Co.

In Canadian Metropolis

Wood, Alexander & James, Ltd., is distributor for Mayflower in Hamilton, Ont., and pictures here its sales force gathered for a recent Mayflower sales meeting.

Out Where the Tall Corn Grows

Another group of Mayflower salesmen, this time representing Iowa Auto Market, Inc., Des Moines, Iowa. Standing, center, C. J. Trawever, president.

WRITTEN TO BE READ ON ARRIVAL

Engineering Section

IN TWO PARTS PART TWO

ELECTRIC REFRIGERATION NEWS

Registered U. S. Patent Office

The business newspaper of the refrigeration industry

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DETROIT DAIRIES ENLARGE SET-UP OF SERVICE DEPT.

Economical Operations Featured in New Modern Shop

By John T. Schaefer

DETROIT—The service department of the National Dairies Co. of this city has been moved to larger quarters and expanded in preparation for the summer season which brings a heavy call for refrigeration service on the 4,000 ice cream cabinets used by customers of Detroit creameries and the Arctic Dairies Co.

J. H. Watson, superintendent of transportation for the Detroit Creamery Co., was in charge of the expansion program.

Among the ingenius service shop methods developed by J. W. Quaine, service manager, are a new method of storing ice cream cabinets in angle iron tiers (accessible at both ends with Lewis-Shepard hoists), and a new distilling room where all sulphur dioxide refrigerant is reclaimed from machines coming in for repair.

A total of 13 Ford service cars, two pick-up trucks, and four installation trucks operate from this department of the National Dairies, whose aim is to keep its ice cream customers constantly supplied with refrigeration. When a customer's ice cream cabinet develops trouble in the field, a rebuilt one can be immediately shipped out with a charge of brine at -10° F., cooled and ready to deliver refrigeration in the retail store.

Mass production methods are used for many of the operations in rehabilitating ice cream cabinets. When a cabinet comes into the shop, William Logue, shop foreman, writes up a repair order

(*Concluded on Page 2, Column 1*)

CARRIER TO COOL AIR IN NEW RADIO CENTER

NEW YORK CITY—Each patron of the two theatres under construction in Rockefeller Center will be allotted 40 cu. ft. of conditioned air a minute, according to the Metropolitan Square Corp., holding company for the development.

Contracts for air conditioning systems in both buildings have just been awarded to the Carrier Engineering Corp. of Newark, N. J. The theatres already have been leased and will be operated by the Radio-Keith-Orpheum Corp.

On the hottest day in summer, the theatre temperature will be reduced sufficiently below the temperature out-of-doors to promote comfort without over-refrigeration, and the humidity will be maintained within a range of from 40 to 55 per cent, the announcement states.

Thermostatic and hygrostatic controls will operate automatically to maintain atmospheric conditions within the so-called "comfort zone." Every cubic foot of air going into the theatres will first be filtered and washed. The air conditioning engineers claim that it will attain better than 96 per cent freedom from dust, dirt and other molecular organisms.

The larger of the theatres, known as the International Music Hall, will seat more than 6,000 persons and will use nine tons of conditioned air per minute. This is equivalent to 241,890 cu. ft., or 40 cu. ft. of air a person. Normal requirements are 30 cu. ft. a person.

Three centrifugal refrigerating ma-

(*Concluded on Page 3, Column 2*)

GIBSON APPOINTS T. B. TARRY INSPECTION SUPERINTENDENT

GREENVILLE, Mich.—T. B. Tarry has become associated with the Gibson Electric Refrigerator Corp. in the capacity of supervisor of inspection.

Mr. Tarry's experience includes time with the Remington Arms U. M. C. Co. as assistant engineer of tests during the World War; later as research engineer with the General Motors Research Corp., and six years with the research department of Frigidaire Corp.

Deny Registration Of 'Iced-Aire' For Ice Box

WASHINGTON, D. C.—The United States Court of Customs and Patent Appeals has decided that the term "Iced-Aire," which the McKee Refrigerator Co. of Cobbleskill, N. Y., sought to register as a trade-mark, so closely resembles the word "Frigidaire" that confusion is likely to result in the trade, and has refused registration of the former.

This finding supports the action of the commissioner of patents, whose refusal to sanction registration was the alleged error on which the matter went to the appeals board. No protest had been made by the manufacturer of "Frigidaire," but the commissioner exercised his right to deny registration without awaiting objection on the part of the company whose mark was, in his opinion, entitled to protection.

The McKee attorneys argued that confusion would not result because of the fact that their refrigerator uses ice, whereas "Frigidaire" employs electricity in its cooling system.

"Iced-Aire" was adopted as a part of

(*Concluded on Page 2, Column 5*)

F-12 WILL BE USED FOR NEW PULLMANS

CHICAGO—Four-cylinder compressors are being used in refrigeration systems which the Pullman Car & Mfg. Corp. is installing for air conditioning service in passenger cars of various steam railroads, according to Ellis W. Test, assistant to the president.

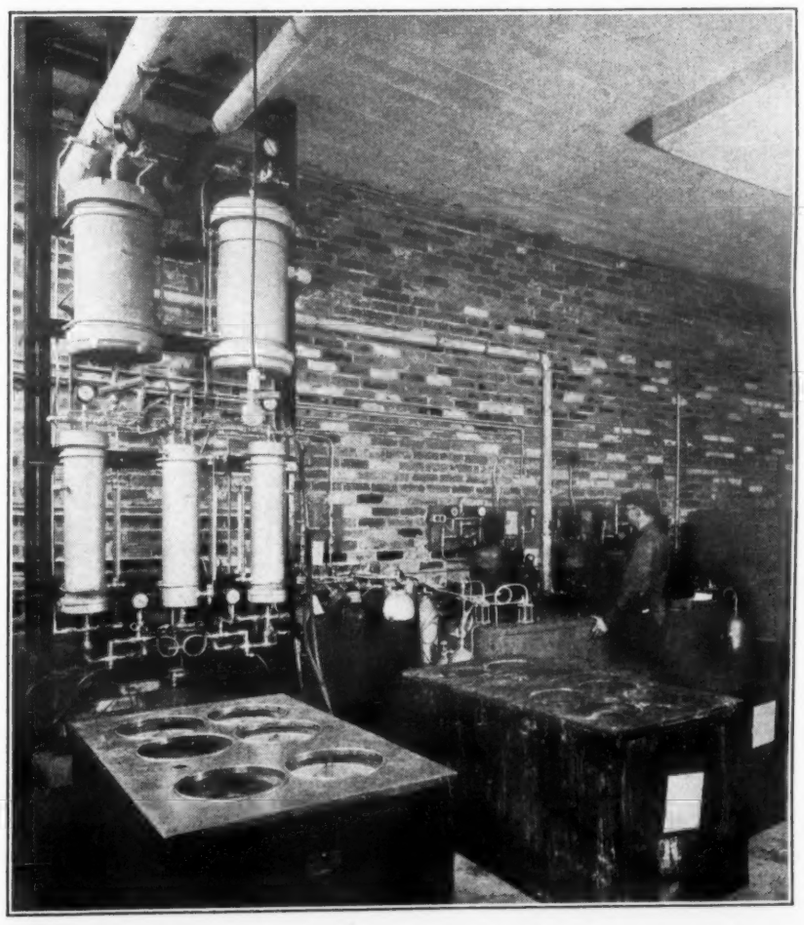
The air conditioning systems embody pressure ventilation, air cleaning, air cooling in summer, air heating in winter, and humidification or dehumidification as required, the entire arrangement being thermostatically controlled, engineers of the Pullman company explain.

In addition to the compressor, the major equipment involved for cooling the air consists of an air-cooled condenser underneath the car, with a cooling coil overhead in the roof, with the latter in series with blower fans, air filter, intake ducts for fresh and recirculated air, and outlet ducts for distribution of the conditioned air into the car. The refrigerant used is known as Freon or F-12 (dichlorodifluoromethane).

The refrigerant is compressed in the compressor and then discharged into the condenser coil where the heat is removed by means of air circulated around the coil by fans. The refrigerant enters

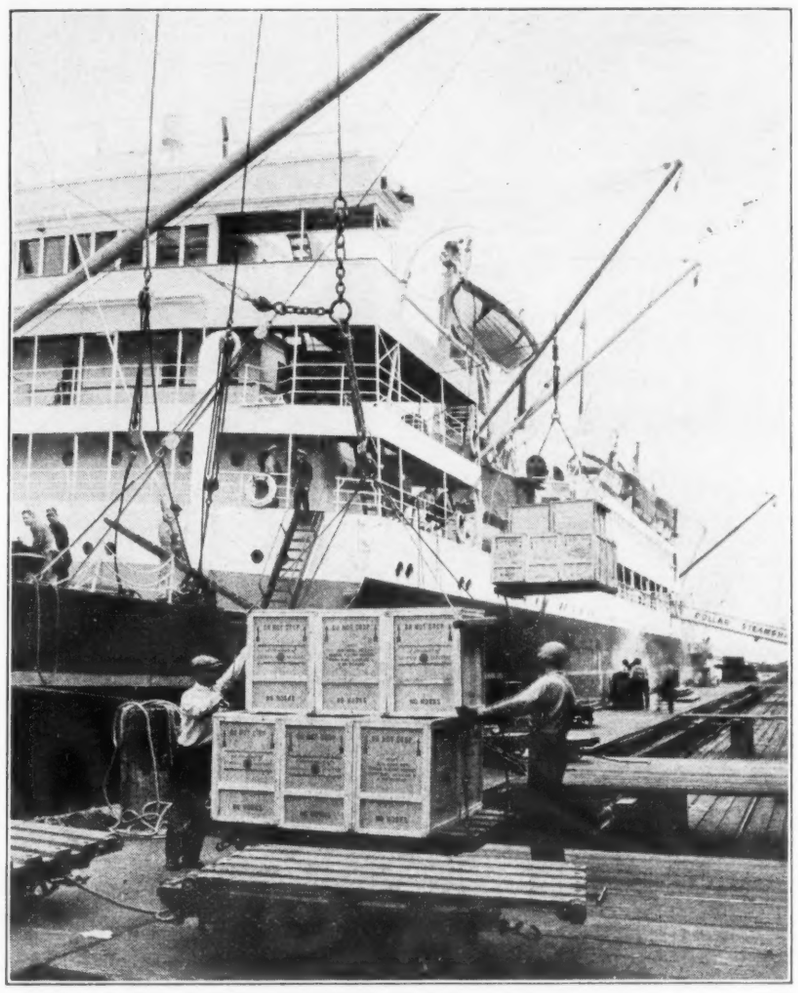
(*Concluded on Page 7, Column 3*)

Refrigerant Still Room



Sulphur dioxide is reclaimed in the above still from all ice cream cabinets to be rebuilt in the Detroit Creameries service department.

Monitor Tops Arrive by Boat



The Steamship "President Hayes" delivers a total of 55 carloads of crated General Electric refrigerators to the San Francisco port for shipment to G. E. distributors throughout California for their Spring campaigns.

First Mayflower Units Shipped in Canada

HAMILTON, Ont., Can.—First shipments of electric refrigerators have been made from the new plant of the Mayflower Corp. of Canada, Ltd., of this city, to some seven Canadian distributors.

The new Canadian plant, built of fireproof, reinforced concrete, covers an area of 22,000 sq. ft. It is located on E. King St., one of the main arteries of travel in and out of Hamilton. A railroad siding provides shipping facilities.

YORK DEVELOPS LINE OF UNIT AIR COOLERS

YORK, Pa.—A new line of unit air coolers for ceiling suspension has just been introduced by the York Ice Machinery Corp., here. The York "Utility Air Coolers," as they have been named, are provided with a shrouded fan which forces air from the room across cooling coils in the cabinet, through a grill, and into the room.

They may be used with either direct or indirect refrigeration, and may be operated from refrigeration systems already existing in a building, the announcement states.

Automatic control of room temperatures may be accomplished by thermostatic regulation of the refrigerating machine, or by thermostatically controlling the flow of refrigerant where the unit is connected to a central refrigerating machine.

To maintain proper air circulation and even temperatures, York engineers

(*Concluded on Page 3, Column 3*)

DIRECT READING ABSOLUTE GAUGE DEVISED BY BRISTOL

WATERBURY, Conn.—Engineers of the Bristol Co., here, have just designed recording absolute pressure gauges of the direct reading type, which show absolute pressure directly without the necessity of making barometric corrections.

The actuating mechanism consists of two sensitive diaphragms, one of which is connected to the vacuum line, the other being affected by barometric pressure variations, the announcement explains. The resulting movements of these two elements are transmitted by a special differential transmitting linkage to a pen-arm which records on a circular chart.

DETROIT A.S.R.E. TO DISCUSS PRODUCTION, MAY 16

DETROIT—The April meeting of the Detroit A.S.R.E. section has been postponed until May 16, C. C. Thomas, section chairman announces. Several phases of refrigerator production will be discussed in the May session, and production pictures of the Kelvinator and Leonard plants will be shown. Louis Ruthenberg will be chairman of the meeting.

DIRECTORS NAME DAVIS PRESIDENT OF R-H CHEMICAL

H. R. Carveth Retires; Other Officers Promoted

NIAGARA FALLS, N. Y.—Following a directors' meeting of the Roessler & Hasslacher Chemical Co., Inc., in New York City, announcement was made that Dr. H. R. Carveth has resigned from the presidency, and that Charles K. Davis was elected by the directors to succeed Dr. Carveth.

Dr. M. J. Brown, vice president and a director also of the Roessler & Hasslacher organization, announced his retirement at the same time. Dr. E. A. Rykenboer, former vice president will henceforth be vice president and assistant general manager.

The other officers named are:

W. F. Harrington, chairman of the board; Colby Dill, vice president and secretary; Milton Kutz, vice president; Albert Frankel, treasurer; August Heuser, assistant treasurer; M. D. Fisher, assistant secretary; E. A. Howard, assistant secretary; J. Carlisle Swaim, assistant secretary.

Dr. Carveth's retirement ends almost 26 years of service with R. & H. After a brief association with the late Dr. E. G. Acheson, Dr. Carveth joined R. & H. in 1906 as works manager of The Niagara Electrochemical Co., Niagara Falls, N. Y.

He became vice president in charge of technical matters in 1917, and president of R. & H. in 1928, continuing in that capacity after the R. & H. merger with the du Pont Co. in April, 1930, at which time Dr. Carveth was elected a director of the du Pont Co.

The retirement of Dr. Carveth was not unexpected, for he had made known his wishes to be relieved of executive responsibilities in order to devote more time to his increased personal interests.

Charles K. Davis, the new R. & H. president, is a known figure in the

(*Concluded on Page 3, Column 3*)

MICHIGAN CO. BUILDS NEW SOLID CO_2 PLANT

WYANDOTTE, Mich.—Michigan Alkali Co., here, has just finished building one of the largest factories in the world for the manufacture of solid carbon dioxide.

The new plant has a daily capacity of 150 tons, and uses for raw material a portion of the carbon dioxide gas that is given off by the fusing of limestone and coke in the production of soda ash, one of the major operations of the company.

More than 2,000 tons of this gas had been going up the chimney every day, an amount sufficient to produce not only more than enough solid carbon dioxide to take care of present requirements, but sufficient to enable Michigan Alkali, by the installation of additional machinery, to step up production to meet much larger future demands. The new plant replaces a smaller unit of 22 tons daily capacity that was opened a year ago, largely for experimental purposes.

Annual consumption of solid carbon dioxide has grown from a million pounds in 1926 to more than a hundred million pounds in 1931, according to officials of the company.

Michigan Alkali stocks of solid carbon dioxide are now maintained in Boston, New York City, Philadelphia, Pittsburgh, Cleveland, Toledo, Detroit, Chicago, Columbus, Cincinnati, Indianapolis, Milwaukee, St. Louis, Kansas City, Rochester, Syracuse, Albany, Dayton, Grand Rapids, and Davenport.

SERVEL IS LARGE CONSUMER OF INDUSTRIAL GAS

EVANSVILLE, Ind.—The plant of Servel, Inc., where the Servel electric and the Electrolux gas refrigerator are manufactured, is one of the largest industrial consumers of gas in this section of Indiana. During the year 1931, over 85,161,000 cu. ft. of gas were used in the factory for refrigerator manufacture.

DETROIT CREAMERIES SERVICE DEPARTMENT ENLARGED, IMPROVED

(*Concluded from Page 1, Column 1*)

from details supplied by the installation man who brought in the machine. This information is placed in a leather folder, with an isinglass window, and attached to the cabinet to be kept with it until the cabinet has been rebuilt and is again sent into field operation.

One of the features of the new equipment is the storage system consisting of long angle iron racks, equipped with rails on which cabinets can be slid, and which can be loaded or unloaded from either side of the shop. Mr. Quaine reports that 320 cabinets can be stored at one time in the racks.

Each row is used to store one certain type of cabinet, separate tracks holding cabinets that have come into the shop awaiting attention, while other rows contain cabinets that have been rebuilt and are ready for field service.

A Lewis-Shepard crane hoist is employed to lift cabinets up to the height of the racks (and to unload the racks), while a windlass has been arranged to move the cabinets along the tracks.

Installation trucks loaded with ice cream cabinets collected the day before for repair, are driven up alongside the storage racks at night, and in the morning the entire capacity of the four trucks, 20 cabinets, can be unloaded into the racks, and 20 rebuilt cabinets placed on the trucks within one hour, according to Harry Hoover, in charge of Detroit Creamery installations, and Harry Welt, in charge of Arctic installations.

Cabinets for shop repair move around the room in a definite line of traffic. They are first washed with warm water, then cleaned with a Wyandotte detergent which cuts any grease accumulation. The insides of the ice cream cans are scratched clean with an electrically driven wire wheel which is sized to move up and down the sleeve interior.

Next a performance test is made to determine what work must be done to each cabinet to put it in good working condition.

This is an important function in keeping down shop costs, Mr. Quaine explains, because some ice cream cabinets are brought in, especially from retailers that have gone out of business, which need only cleaning and minor adjustments. Twenty machines can be tested at once along the testing panels.

In many instances the compressor has so worn that a complete overhauling is necessary. Then it is removed from the cabinet and directed to the compressor repair division.

Or the cabinet itself may be the defective link, in which case the cabinet department is ordered to tear it down, and make the necessary repairs—new cork insulation, new monel tops, new side or end panels, or new wood tops. Cabinet lids are always washed, repaired, and buffed like new.

Practically no refrigerant is wasted since installation of the "still" room, where sulphur dioxide from incoming machines is exhausted, put through a distilling process, and stored for future use, Mr. Quaine points out. Approximately 125 lbs. of the refrigerant is reclaimed per day on the average, he reports, so that a substantial savings is effected in the purchase of new gas.

Three Nizer compressors have been installed in the still room to exhaust machines, move the refrigerant through the distilling process, to condense and store it in tanks, and to exhaust rebuilt machines for charging. A flexible arrangement of valves permits the use of any or all of the Nizer compressors for the various operations.

When a machine to be rebuilt comes into the still room for removal of its refrigerant, the gas is pumped from the discharge valve of the machine through the still apparatus, and discharged into storage tanks high up on the wall which contain water coils for condensing the cleaned and dehydrated gas into a liquid.

Each of the two storage tanks holds about 230 lbs. of refrigerant, and is valved for convenient draining into the charging tanks below.

In the still itself, the gas is passed successively through an oil separator which removes oil and dirt, then through an oil trap which extracts such dirt and oil as may have gone through the oil separator, and next through two calcium chloride towers which remove most of the moisture, and finally through a 96 per cent concentrated solution of liquid sulphuric acid which takes out the remainder of the moisture.

To evaporate all the liquid refrigerant in a compressor being drained, the crank case is heated with a blow-torch.

Charging of rebuilt machines is another operation done in the still room. Machines are first exhausted by the Nizers, and then by manipulation of valves the proper amount of new oil is drawn in, measurement being made in pounds according to graduations on the oil level gauge glass beside the 20-gal. oil charging tank. A feature of the oil charging system is that at no time is the oil allowed to come in contact with impurities of the atmosphere.

Similarly, the proper amount of liquid refrigerant is fed into the exhausted compressor from the two graduated charging tanks below the storage tanks.

Earl Jennings, in charge of the still room, points out that he has a good check on leaks in rebuilt compressors coming from the shop, by observing the pressure gauge when the evacuating process is finished. And tendency to build up pressure in the system indicates a leak.

Systematically arranged along one side of the building is the department which rebuilds the condensing units. Compressors are taken apart and washed in carbon tetrachloride.

Discharge valves are taken down, cleaned, reworked, and must hold a 28- or 29-in. vacuum against an 80-lb. head pressure before they go into stock. The flapper valves are lapped on emery paper. Mr. Quaine has devised a method of mounting the paper on a wood block, instead of using the conventional steel lapping plate.

To seat seals properly, a crank shaft is mounted in a special lathe and the worn portion of the metal turned off. Then a seal is seated to the revolving shaft, by hand pressure, and the seal and shaft stored as a pair.

Repair parts are stored on the floor above, and are carried up and down by a small electric elevator.

Every two weeks service men bring in their pressure gauges for test in comparison with a master gauge in the shop.

The region serviced by the Detroit Creameries is divided into 10 districts, with one service man operating a car in each, and responsible for the operation of some 400 machines in his district.

Service men phone in to the office regularly, and are given instructions for further calls. Men in the office know all the time where each service man is, and can telephone for one immediately should an emergency call come in.

Lacking calls for service, the field men make inspections of machines operating in the field, or check up on installations which have recently been serviced. At night each service man makes a written report on calls answered, inspections, and checks made, and the next morning his report is analyzed and recorded in the files.

Mechanical Handling of Ice Cream Cabinets

Detroit Creamery men loading an installation truck with rebuilt ice cream cabinets. At the extreme right appears a portion of the special racks constructed for cabinet storage.

Superintendent

J. H. Watson, transportation superintendent directed expansion of the service department.

Service Manager

J. W. Quaine developed a number of ingenious service shop methods for the Detroit Creameries.

COURT DENIES McKEE RIGHT TO 'ICED-AIRE'

(*Concluded from Page 1, Column 2*)

a campaign sponsored by manufacturers of ice to popularize the use of that cooling element, and it was considered that the term was especially appropriate in view of its suggestive character, according to the appellant's brief.

SPREEN'S APPEAL

Because of an unusually heavy docket, the appeals court has laid over to its fall term the appeal of Charles C. Spreen of Detroit, who protests the commissioner's refusal to issue patents on insulating methods and methods of installing compressors in refrigerating system.

Spreen's encounter with the patent office began Jan. 2, 1925, and continued up to last year when, after appeal to the commissioner had resulted in rejection of his claims, he carried his protest to the appeals court. He disputes the finding of the patent commissioner that the methods he points to as original are merely matters of choice in construction, rather than propositions involving inventive faculty.

The insulating methods which he claimed to be new were said by the federal bureau to have been patented June 26, 1900, by H. J. Sullivan of Milwaukee, Wis.; the method of installing the compressor, also claimed as original, was rejected and attention directed to the patent issued to Richard Whitaker of New Brunswick, N. J., March 28, 1904, who was credited with use of the method for 20 years prior to the Spreen application; the self-contained refrigerant idea was said to be not patentable in view of coverage granted June 28, 1910, to R. W. Emerson and F. Bishop of South Bend, Ind.

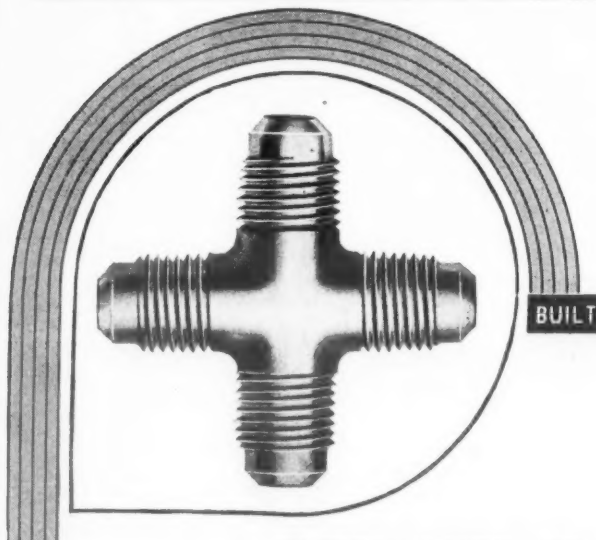
REPLOGLE ACTION

Continued also is the appeal of John R. Replogle of Detroit, who was denied a patent on a refrigerator valve control. His claim is based on the fact that the valve which he proposed to use employs a snap action valve which differentiates it from the pressure valve patented by Arthur H. Eddy of Windsor, Conn., May 30, 1916.

The commissioner held, however, that substitution of snap action for pressure is not such a change or improvement as to warrant issue of a patent.

A third appeal based on claimed improvements in refrigerating methods which was not reached and must be continued to the next term, is that of George Barsky of New York, who was unsuccessful in his quest for a patent on an air cooled condenser for household units.

The one difference discovered by the patent office in a comparison of his method with others already patented was a substitution of air cooling for water cooling. This, the patent office contends, involves no feature of patentability.



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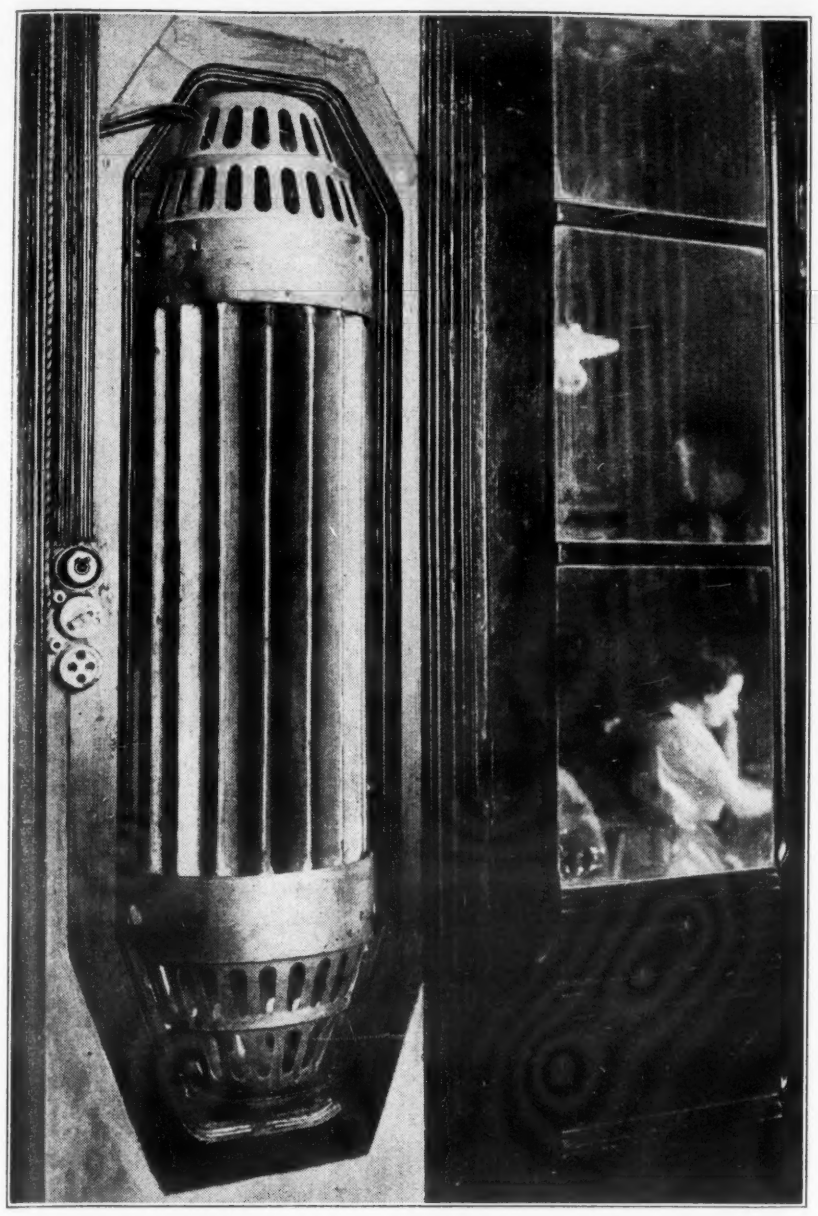
French Room Coolers



By circulating cold water or brine through this air cooler, French engineers accomplish a cooling effect in an average room of 7 to 8° C.

* * *

FRENCH HAVE NOVEL ROOM COOLING UNIT

By O. C. Zilisch

PARIS, France—For a number of years France has been following America very closely in the matter of modern conveniences for the home and the office. With the introduction of American refrigeration systems in the cinemas of Paris has come the move for cooling systems in the home as well.

Development along these lines is fairly active at the present time, due to the fact that the builders of such cooling systems have a rather large territory to draw upon, namely the whole southern part of France and the French colonies, including especially Algeria, Tunis and Morocco.

Good Market for Refrigeration

The Riviera or Cote d'Azur section of southern France is known for its wonderful climate in the winter time, but the summers are admittedly hot, due to the humidity. This section is, therefore, proving an excellent market for home refrigerating and cooling systems. The French colonies are using a good many of these systems, and in the accompanying photograph is shown one that is very popular in Tunis and Algeria.

This system employs cold water, or brine, at 7° Centigrade, cooled by a conventional refrigerating machine. This cold water is distributed in radiators of special construction, sometimes half embedded in the wall.

Condensation Drained Off

Two ventilators assure the proper mixture of the air in contact with the cooling elements. A basin has been incorporated at the bottom of the apparatus to receive the condensed humidity.

Within 20 minutes a lowering of temperature varying between 7 and 8° Centigrade is obtained, and a humidity reduction of 20 to 25 per cent is claimed. Humidity reduction is found important in sections like those surrounding the city of Nice, for example, and the apparatus has, therefore, met with considerable acceptance.

CENTURY OFFERS NEW LINE OF SMALL MOTORS

ST. LOUIS—Century Electric Co. of this city has developed a new line of brush riding single-phase repulsion start induction motors, intended primarily for applications where the most quiet operation or the higher operating characteristics are not required.

This line of motors is not intended to replace the Century brush lifting motors which will continue to be supplied for long hour-per-year applications, such as refrigerators, oil burners, etc., the announcement states.

925 Refrigeration Tons Now Being Installed In Radio Center

(*Concluded from Page 1, Column 1*)

chines, with a capacity of 600 tons of melting ice per 24 hours, will form the basis of the weather-making system. In terms of ice poundage, they represent the summer day requirements of a city of 150,000 people. Other equipment includes three air conditioning machines in which the air is to be washed and its temperature and humidity fixed.

The Sound Motion Picture Theatre in the south block will have seating capacity of 3,500, and will be supplied with five tons of conditioned air per minute. It also will be equipped with three air conditioning and three centrifugal refrigerating machines, with a capacity of 325 tons of refrigeration.

A new method of distributing the air evenly throughout the audience has been worked out by the engineers. The inlets are to be in the dome and ceilings, and the volume of each so controlled that an "etherial climatic blanket" will be falling uniformly over the audience. After performing its service, the air is withdrawn through floor outlets.

NEW APPOINTEES FOR R. & H. CHEMICAL CO.

(*Concluded from Page 1, Column 5*)

chemical industry, having been president of the Viscoloid Co., another du Pont subsidiary. Before joining du Pont, he was with the Aluminum Company of America, American Steel Foundries, American Smelting and Refining Co., and the Braden Copper Co. in Chile.

Dr. E. A. Rykenboer, vice president and assistant general manager, graduated from the University of Rochester in 1912 and received his Ph. D. degree from the University of Michigan in 1917.

In 1930 he was made general superintendent of the Niagara Falls plant. In 1930 he was elected a director, and in 1931, a vice president of the company.

Dr. Brown had been with R. & H. for over 21 years, prior to his retirement. He joined the R. & H. Niagara plant as a chemist in 1911 and remained until 1917, when he was transferred to the company's Perth Amboy, N. J., plant, for special work in connection with the construction and management of a factory for the production of war materials.

In 1919 he was made assistant to the second vice president in charge of technical operations. That same year he went to El Monte, Calif., to become a resident executive of the Pacific R. & H. Chemical Corp., and R. & H. subsidiary of which he had just been made executive vice president and a director.

He returned to the Niagara plant in 1922, taking up his former duties as assistant to the second vice president, and from 1926 to 1930 he was general superintendent at that plant. He was elected a director of the company in 1927, assistant vice president in 1929, and vice president in 1930.

YORK DEVELOPS LINE OF UNIT AIR COOLERS

(*Concluded from Page 1, Column 4*)

recommend that the fan be kept running continuously, apart from machine operation.

Sides, bottom, and top of the cooler are of 15-gauge steel, while the front and rear panels are of 14-gauge steel, finished in lacquer.

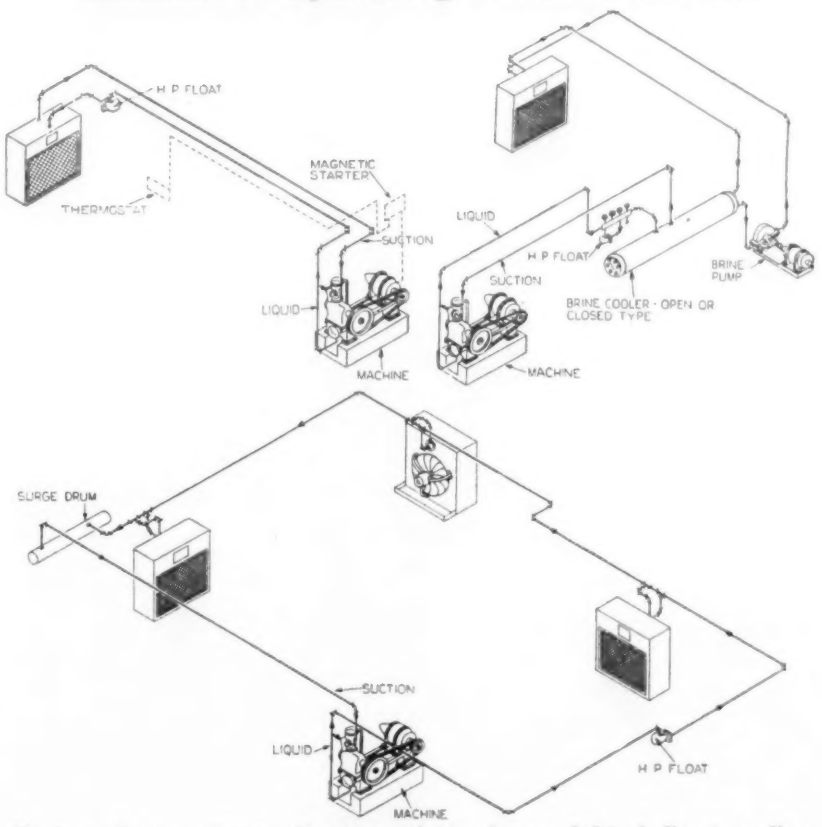
The air outlet is fitted with adjustable louvres to eliminate entrained moisture, and to control the direction of the air circulation. The louvres are protected by a chromium plated wire grill which is removable for cleaning or adjustment of the cooler.

An insulated drip-pan underneath the unit catches condensing moisture and drains it from the cooler. The unit is designed for suspension from the ceiling by means of four flanged hanger bolts; hangers are directly connected to the coil stands.

When temperature requirements are such that there is no frost formation on the cooling surface, continuous operation of the refrigerating machine or uninterrupted circulation of the refrigerant through the coils is permitted, York engineers state.

"Where frost occurs with air entering the unit at 36° F. and above, defrosting may be accomplished by allowing for shut-down periods with hand or automatic control. During these periods no refrigeration is supplied to the cooling surface. Where the temperature of the air entering the unit is continuously below 36° F., special provision must be made for defrosting," the announcement explains.

Methods of Operating York Air Coolers



York engineers suggest direct expansion (upper left), indirect cooling (upper right), or multiple operation (lower) for their new air coolers.

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Baltimore, Md. .....108 South Street, Clendenin Bros, Inc.
New York City.....246 Fifth Avenue, W. H. Schrank Company
Philadelphia, Pennsylvania, 523 Arch Street, Fretz Brass & Copper Co.
Greensboro.....North Carolina, Home Appliance Service Co.
St. Louis, Missouri, 2817 Laclede Avenue, Brass & Copper Sales Co.
San Francisco, Calif., Merchants Exchange Bldg., A. W. V. Johnson
Wilmington ..... North Carolina, N. Jacobi Hardware Co.
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STRESSES PROFIT IN SELLING AIR COOLING

By Milton K. Arenberg*
Chicago District Manager, Ilg Electric Ventilating Co.

THE subject of air cooling can properly be divided into three classifications; namely, for human comfort; as a necessity into the manufacture of certain products; and as a means of increased profit for retail establishments.

While it is true that the increased patronage and resulting profit to a retailer is derived from his having provided air conditions conducive to greater human comfort, there is still a difference between cooling for profit and cooling for human comfort in the method and type of equipment which can be used.

One most important phase of cooling for human comfort is that of homes. The results from these installations are measured in the greater enjoyment the home owner secures out of life. The initial cost of these systems is not important if the person is one of means, providing he and his family secure the ultimate in human comfort from the physiological standpoint. In other words, at least at present, price is somewhat secondary and the results cannot be measured by the dollar and cents standard.

However, the cooling of retail places of business and places of amusement is and must be measured by the cost standard. Therefore, initial and operating costs become of prime importance in order to determine whether profit can be derived from the installation. Under these conditions the type of equipment used and the manner of installing it are controlled.

The owner might prefer to have everything that pertains to the cooling system completely out of sight; he might desire the dry and wet bulb temperatures to be regulated automatically to within one degree variation regardless of outdoor conditions, etc., but will the initial and operating costs of such a system show him a greater or equal return with that from a system where some of the equipment is visible and the air conditions are comfortable enough to attract patrons to his establishment. If it will not, then he must use whatever simplified system is available to him.

The use of the unit system of heating has steadily progressed during the past 16 years. It based its appeal on economical and initial costs. Numerous steam unit heating systems have replaced stove heat in stores, garages, offices, etc., because the unit system made steam heating available to the pocketbooks of those who could not previously afford it.

The unit system of cooling, therefore, appears to be one simple approach to our goal of universal acceptance of air conditioning, this acceptance being brought about by the public enjoyment of it in the stores of merchants whom they patronize, and those merchants being able to show a profit from having installed it.

I want to describe several installations of unit cooling to show the types of business that have accepted it and what it has meant to them.

One is a restaurant of the luncheonette and soda type. It is 21 ft. wide, 112 ft. long and has a 15-ft. ceiling, or a volume of 35,000 cu. ft. The seating capacity is 110. It has been in business many years, but did not install a cooling system until June, 1931.

During the past summer the average daily receipts increased $148 and the management stated that at least 100 persons were turned away each day at noon because all tables were taken and no standing room was available. This restaurant advertised quite regularly in the daily newspapers to keep its name before the public, but no mention of the cooling system was ever made because the word-of-mouth publicity of their patrons was sufficient to keep them crowded.

Cites Restaurant Experience

Another restaurant 32 ft. wide, 40 ft. long with a 10-ft. ceiling, or a volume of 12,800 cu. ft., seated 68 people. It installed a 7-ton cooling system. They were one of a chain that specialized in steaks and chops, and this was a new location opened in early summer. They found after six weeks, that they could not sell steaks and chops because of the high temperature of the room, so they withdrew them from the menu.

After the cooling system was installed, steaks and chops were reinstated on the menu, and business flourished. Incidentally, it was fortunate that the cooling system had ample capacity, as I counted 37 people one noon who were standing awaiting tables or the equivalent in cooling of approximately one additional ton beyond full seating capacity requirements.

Another restaurant installation consisted of cooling three separate rooms—a cafeteria, soda fountain, and a dining room. Thirty tons of refrigeration capacity were required and 10 unit coolers, the total volume of the three rooms being 51,315 cu. ft.

It is unfortunate that their accounting system does not permit accurate figures on the increased business, but the management stated that they had a very noticeable increase in the sale of soup and coffee, and that it was the first time in two years that there were sufficient cafeteria customers to form a line to the checker's table.

I believe we have all been too quick in assuming that the greatest market for cooling is in the theatres and restaurants. This has probably been brought about by the fact that these two classes have been the leaders in the past in accepting proper standards of ventilation, but what about drug stores, shoe stores, ladies' ready-to-wear apparel, millinery, men's clothing, groceries, and 5-, 10-, 25-cent and $1.00 stores?

Our entire system of retail merchandising is based on display. The merchant spends time, money, and effort in trimming his windows in the hope of attracting the attention of the passerby, and getting him to come into the store. The store consists of display counters and cases trimmed in an equally attractive manner, again with the hope of attracting the eye of the patron to a different article.

But who is willing to linger and look if the air conditions are such that they are uncomfortable? Who desires to remain in a hot, stuffy atmosphere, and try on tight or loose apparel in the hope of eventually finding the proper one? However, who is not willing to do this if the air is properly cooled?

A large southern store tried to sell clothing when the temperature on its second or top floor was 120° F. Twenty-two tons of refrigeration were required to cool the two floors, which had a total volume of 143,000 cu. ft.

After the cooling installation was made, it was announced in the newspapers for one week. At the end of this period the management stated that experience proved that clothing could be sold in volume, regardless of outdoor conditions, and that the cooling system had already earned a fair part of its cost.

Helps Tonsorial Business

A Cleveland hotel barber shop, 40 ft. long, 32 ft. wide and 10- ft. high, or a volume of 12,800 cu. ft., installed slightly over six tons of refrigeration and they found their patrons in no hurry to get out of the chairs—which resulted in extra items on the check.

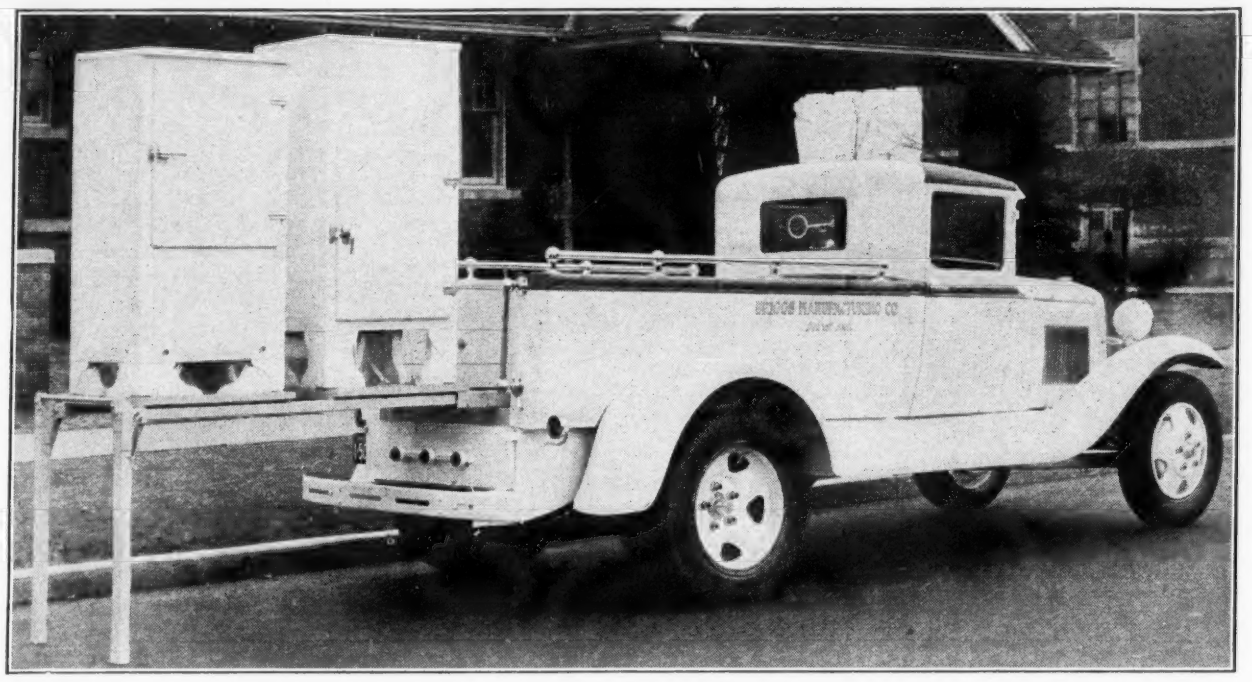
An undertaker has cooled his chapel which seats 30 persons, and states that his comfortable chapel has brought him two funerals that he would not otherwise have had. These funerals showed a gross profit of $680, and the cost of the cooling system was $825.

Cooling has its place in the wholesale establishment as well as in the retail. A manufacturer of ladies' dresses installed a one-ton cooling system in the display room. His customers were not only willing, but anxious to remain there until the models had displayed all available designs. He estimated that the cooling system paid for itself the first summer.

All of the unit coolers mentioned were connected to mechanical refrigerating machines, but their design and piping would not preclude connection to an ice melting tank.

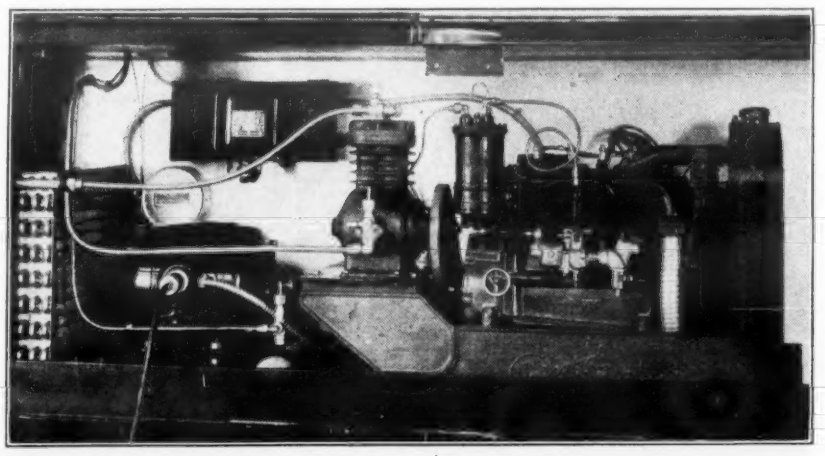
*Presented at the air conditioning conference of the Case School of Applied Science, Cleveland.

Briggs Cabinets in Traveling Display



Briggs Mfg. Co. of Detroit shows its new steel cabinets to refrigerator manufacturers from this special display truck. The cabinets are mounted both to swivel and to pull out.

Trupar Truck Unit



Trupar Mfg. Co. installed this truck refrigerating unit in a meat delivery truck of George Thomas, Cincinnati. During the day the machine is driven by a Universal Motor gas engine. At night an electric motor drives the compressor. Both day and night operation is automatic.

TRADE ASSOCIATIONS AWARD PAINT GROUP

NEW YORK CITY—The American Paint and Varnish Manufacturers' Association was selected last week as the winner of the 1931 award of the American Trade Association Executives. The award is given each year to the association reporting accomplishments considered most valuable to the public, to its own industry, and to all industry.

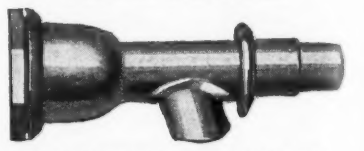
Honorable mention was given to the following associations, without ranking them in the order of merit: Association of American Soap and Glycerine Producers, Roscoe C. Edlund, manager; Cotton Textile Institute, Paul B. Halstead, manager.

Northern Hemlock and Tard Wood Lumber Manufacturerers' Association, O. T. Swan, manager; National Bureau of Casualty and Surety Underwriters, James A. Beha, manager.

Other members of the jury were Walter Dill Scott, president, Northwestern University; Francis P. Sisson, National City Bank; Merle Thorpe, editor, *Nation's Business;* Owen D. Young, chairman of the board, General Electric Co., and Robert P. Lamont, Secretary of Commerce.

A comprehensive and well-coordinated program, well carried out, and a voluntary agreement by which they set up and operated an Unfair Competition Bureau were given as two reasons for the selection of the prize winner.

DRINKING WATER FAUCETS
for
Refrigerators—Water Coolers
New model now available for use on city water pressure



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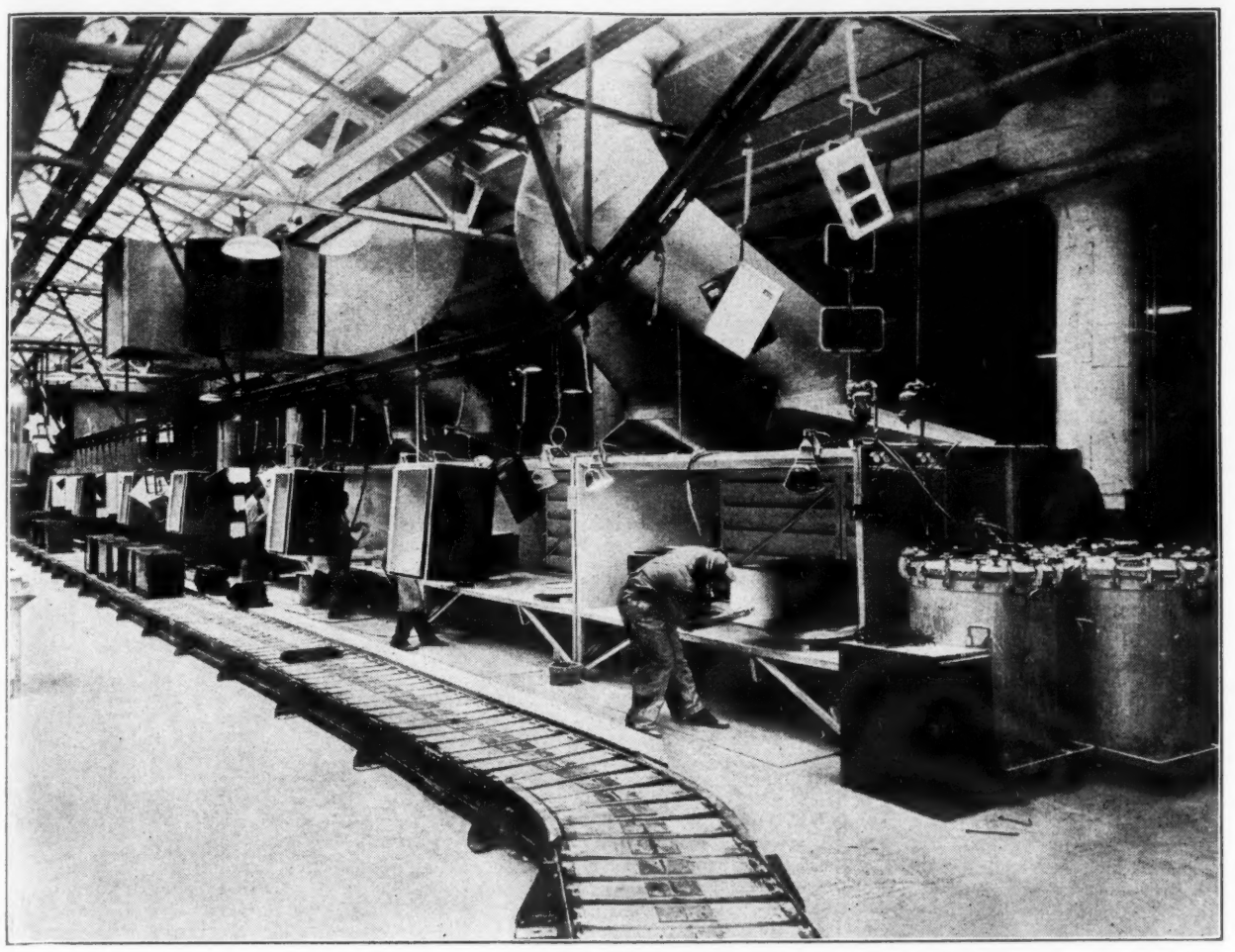
Enameling Majestic Cabinet Liners



The final coat of white enamel is applied to the completed food compartments of Majestic refrigerators in these spray booths. Next they go to large baking ovens.

Engineer Visions Wide Use of Plastic Materials In Cabinet Designs of Future

By F. E. Brill
General Plastics, Inc.

ENTIRE refrigerator cabinets molded from resin-impregnated paper in a wide variety of surface finishes, steel-core doors with plastic sheet coverings, molded plastic door handles, trays and unit-housings, synthetic-resin enamels of amazing toughness are a few of the possibilities which are appearing on the refrigerator horizon, and which are being studied by leaders in the phenolic plastics industry.

Tomorrow's Refrigerator?

Tomorrow's refrigerator may no more resemble today's design than the first sprawling radio set resembles the compact instrument now being made. And phenolic plastics will play an important part in the transition.

More efficient insulation will be developed, permitting thinner walls and doors. The entire frame and case may be molded in two or three pieces of insulating plastic material, greatly lightening the overall weight of the refrigerator, and permitting the use of more interesting color, sculptural and decorative treatments.

Partly through the greater use of plastics both in the mechanical units and the cabinet itself, the entire machine will be lightened, so that tomorrow's refrigerator may be built into the wall or kitchen cabinet at eye level.

Already phenolic plastics are being used extensively in refrigerator units and cabinets. In molded form these synthetic compounds have a number of uses as mechanical parts, their inherent resistance to heat, cold, moisture, chemcal action and wear making them desirable for refrigeration work.

Shelf Supports

Molded pieces are also suitable for cabinet interiors in the form of shelf supports such as shown in the adjoining photo. The non-conducting qualities of plastic parts make them pleasant to the touch in any temperature, and manufacturers capitalize on this feature by using them for control knobs and regulators.

The makers of Durez have recently developed an odorless and inert molding compound—a material which could be used even for butter trays without imparting any odor or taste whatsoever.

A little over a year ago, this same firm came forward with Durez Odorless Laminating Varnish for making laminated refrigerator door strips. Since then, the swing of refrigerator manufacturers to laminated phenolic breaker strips has been surprising.

The advantages claimed for phenolic strips are high lustre, low moisture absorption, an easily-cleaned surface, and greater resistance to warping, chipping, swelling, and abrasion.

Homogeneous Material

In addition, the surface qualities of the laminated strip extend all the way through, so that gouging or cutting the surface will not release odors or expose unprotected and vulnerable parts.

In view of the progress which has been made in adapting phenolic plastics to refrigerator work in a period of a few months, it is only logical to expect many more developments in the next few years.

It is entirely feasible to mold an entire refrigerator cabinet from resin-impregnated paper, with the advantages of much less weight, greater insulating value, and probably reduced cost.

Suggests Variety

While we can't help but admire the clean, functional lines and the honest designing of today's cabinet, the fact remains that there is little originality or individuality in design. While refrigerators are machines and should not try to be furniture, there is no more reason why they should all look alike than that every motor car should resemble other motor cars.

As mechanical advantages are levelled out, industrial designers will have a heyday with refrigerators, and plastic materials will be brought prominently into the picture.

With plastics, any motif, design, or photograph can be transferred to the surface sheet of the laminating paper, offering interesting design opportunities. Harmonizing textiles can be used for surfacing, giving designers another means of expressing individuality and relieving the drabness of the housewife's workroom.

Claims Easy Cleaning

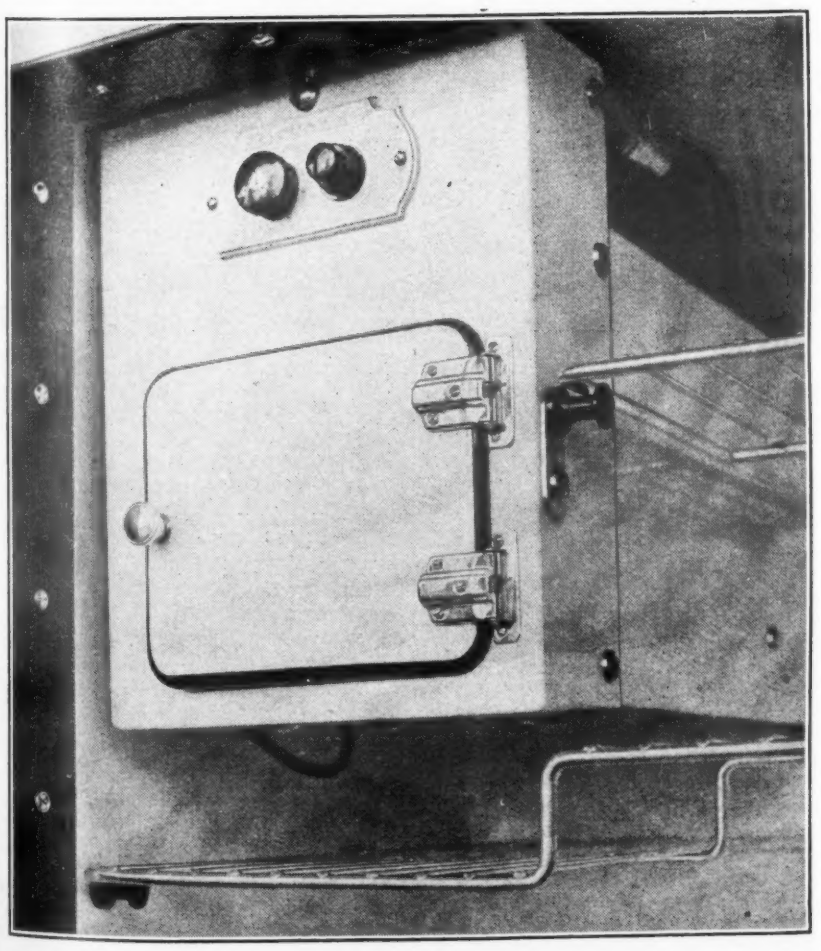
In all of these instances, the surface of the cabinet would be easily-cleaned, wear-resisting, and warm to the touch, for the resin-impregnating and hot-pressing of paper or fabrics give a finished homogeneous sheet of hard, smooth, infusible, dirt-proof and fireproof synthetic lumber, with the added value of formability and rigidity.

In addition, molded plastics of special qualities will be more and more widely used as the mechanical refrigerator follows the lead of the motor car toward compactness and efficiency. Doors will be opened by attractive molded knobs harmonizing with the new forms taken on by the cabinets—pleasant to the touch, colorful, and far less conspicuous than the present machinery used on doors.

Trays may be molded of odorless materials which will not chill the hand when removed from the box. In short, plastic materials can be counted on both to make mechanical refrigeration more beautiful and more within reach of the masses.

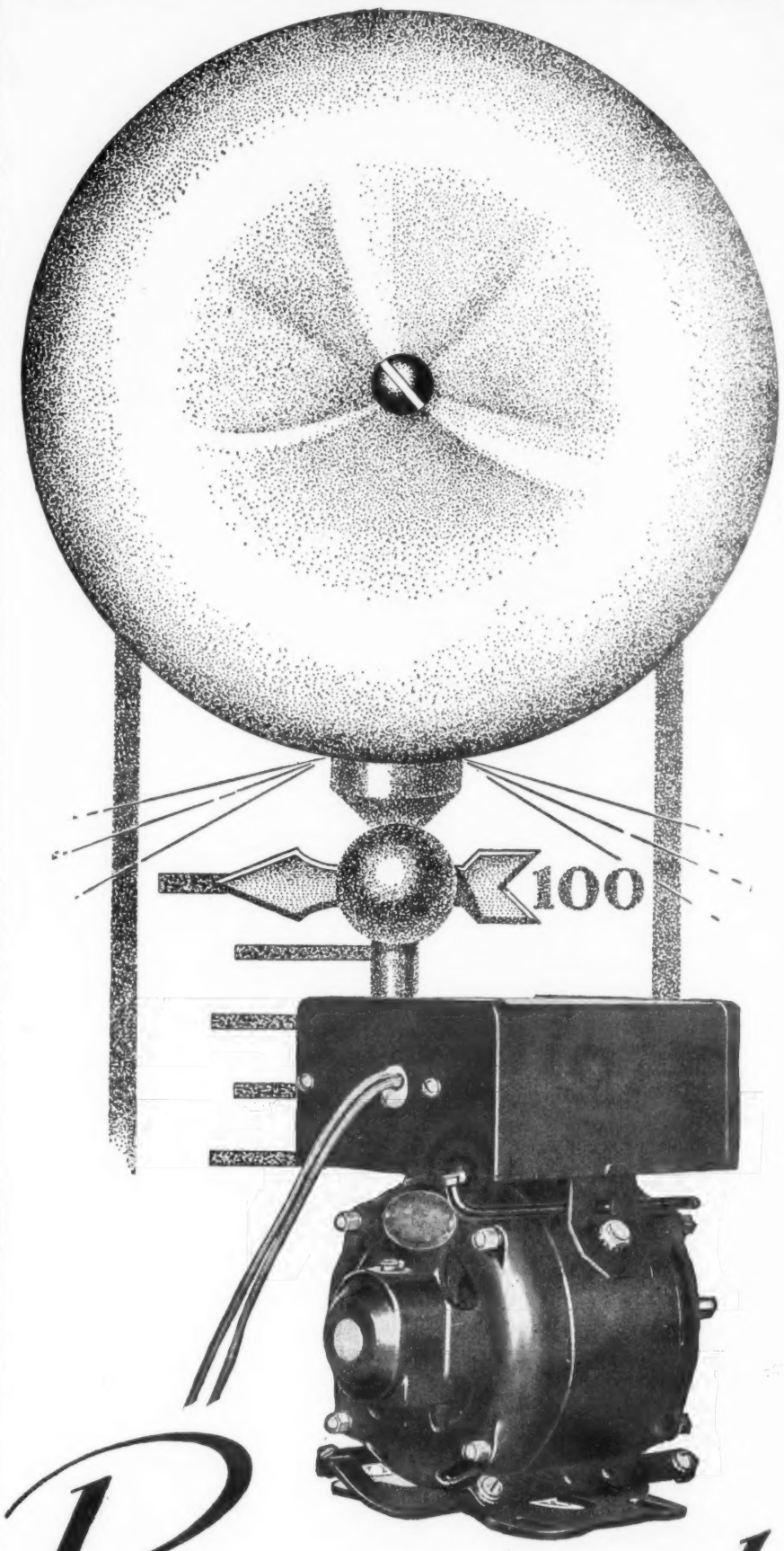
• • •

Phenolic Plastics in a Refrigerator



In addition to door breaker strips and shelf supports as shown above, Mr. Brill suggests that plastic phenolic materials may find other uses in refrigerators of "modernistic" design.

G-E TYPE KC



Rings the bell!

THE Type KC *"care-free"* capacitor-motor represents the highest achievement in refrigerator motor design. It is the *correct* motor for your refrigerator.

Try it . . . you also will say it "Rings the Bell."

Ask your nearest G-E office to give you complete details about the Type KC—the "care-free" motor that rings the bell!

210-153

GENERAL ELECTRIC

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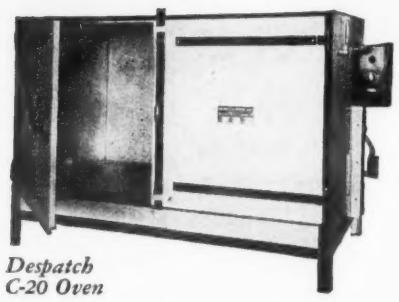
Despatch Service Station Ovens



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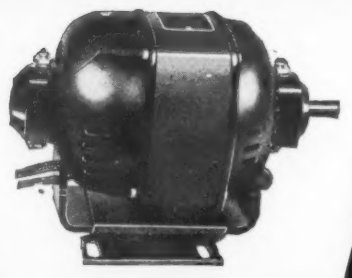

That Leland brush-lifting motors, with the special Leland cradle mounting, are unusually quiet and vibration free!

That, coupled with a continuous self-filtering lubricating system, they rarely require service!

That Leland motors of this design are in widespread use in the field of electric refrigeration — and merit your careful investigation.

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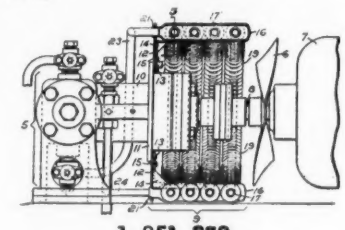
Review of Latest Patents

ISSUED MARCH 29, 1932

1,851,014. MEANS FOR CONDITIONING AND CIRCULATING THE AIR IN BUILDINGS. Charles A. Moore, Edina, Minn. Filed March 30, 1929. Serial No. 351,305. 22 Claims. (Cl. 257—8.)

22. In combination, a structure providing a room, a pair of conduits, one thereof extending along the upper portion of the room and communicating along its length with the interior of said room and adapted to introduce air into the room, the other conduit being in communication with the room at a different elevation and adapted to receive air from the interior of the room, temperature effecting means within said first conduit extending along the length thereof, and means for impelling air through said conduits.

1,851,239. REFRIGERATION APPARATUS. Eugene A. Cobb, Lynn, Mass., assignor to Walter J. Sugden, Boston, Mass. Filed March 15, 1928. Serial No. 261,942. 6 Claims. (Cl. 62—115.)



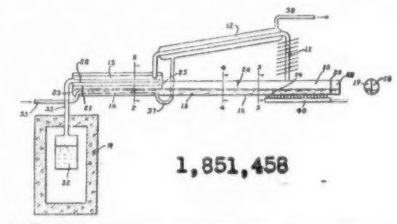
1,851,239

1. In a refrigeration apparatus, the combination of a condenser comprising conduit means disposed about a central air space and having air passages leading from the surrounding atmosphere to said space, a compressor, means supported by said compressor and closing said space at one end, and a fan adjacent and directed toward the other end.

1,851,329. CONDENSER FOR REFRIGERATING SYSTEMS. James B. Replogle, Detroit, Mich., assignor to James B. Replogle Laboratories, Inc., Boston, Mass., a Corporation of Massachusetts. Filed Aug. 23, 1929. Serial No. 387,965. 6 Claims. (Cl. 257—64.)

1. In a mechanical refrigerating system, a condenser comprising a closed container adapted to be filled with water, a vessel in the container adapted to be partially filled with condensed refrigerant, a conduit for admitting compressed refrigerant gas into the vessel beneath the liquid refrigerant level, and an outlet conduit through which condensed refrigerant passes from the vessel.

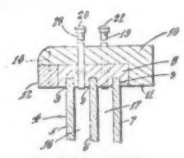
1,851,458. REFRIGERATING APPARATUS. Harry F. Smith, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed March 27, 1930. Serial No. 439,379. 4 Claims. (Cl. 62—119.5.)



1,851,458

2. Refrigerating apparatus comprising a horizontally disposed absorber, a horizontally disposed evaporator located within said absorber, said evaporator comprising a conduit having an upper concave surface forming the evaporating surface, means for transferring heat from the interior of said conduit to the evaporating surface, and means for preventing the transfer of heat from the absorber to said evaporator.

1,851,515. REFRIGERATED SHOWCASE. Howard M. Hunt, Huntington Park, and Joseph H. Batteiger, Los Angeles, Calif., assignors to Smoot-Holman Co., Inglewood, Calif., a Corporation of California. Filed March 12, 1930. Serial No. 435,166. 2 Claims. (Cl. 312—116.)



1,851,515

2. In a refrigerated showcase adapted to be reduced in temperature within, including a display section formed of a plurality of plates of glass, a continuous rim of comparatively soft vulcanized rubber of lesser perimeter than the perimeter of the plates of glass applied over the edges of the glass plates, said rubber rim having a plurality of continuous grooves, a molding having a plurality of sides into which the rim is fitted, a pressure block secured to the molding in position to compress portions of the rubber rim against the edge portions of the surfaces of the plates and to compress other portions of the rubber rim against the molding to hermetically seal the molding and glass plates by the said rubber rim, said molding having an aperture, and a vent tube anchored in said rubber rim and having a portion extending through said aperture to a point on the outside of said showcase and having a removable closure attached to said vent tube on the outside of said showcase.

1,851,535. DISPENSING STATION. Henry Du Pont Baldwin and Clement L. Stafford, Greensboro, N. C., assignors to Southern Public Service Co., Greensboro, N. C., a Corporation of Delaware. Filed Oct. 22, 1929. Serial No. 401,414. 2 Claims. (Cl. 62—34.)

1. A dispensing station comprising a weatherproof heat insulating casing adapted for use in the open, and including heat insulating upright side walls, a top wall, and a bottom wall, and subdivided to form an ice chamber and a cooling chamber below the ice chamber, a horizontal track on the bottom of the cooling chamber extending from end to end of said chamber, a receiving doorway in one of the side walls communicating with one end of said track, a delivering doorway in the opposite side wall communicating with the opposite end of the track, doors adapted to close said doorways, the door of the delivering doorway being connected by horizontal hinges with the lower end of said doorways, means for horizontally supporting the door of the delivering doorway so that said door, when opened, constitutes an external extension of said track, an ice doorway in an intermediate side wall communicating with the ice chamber, and a door adapted to close the ice doorway, the track being proportioned to support and permit the sliding of a plurality of cooled article containers which are movable, with their charges, through the receiving and delivering doorways, the arrangement being such that one container may be moved through the delivering doorway and supported in retailing position by the opened door of said doorway, the location of the ice doorway in an intermediate wall permitting ice to be inserted in and retailed from the ice chamber without interference with the retailing of cooled articles.

1,851,740. APPARATUS FOR PREVENTING ADHESION BY FROSTING. Laura K. Townsend, Philadelphia, Pa. Filed Aug. 8, 1930. Serial No. 473,970. 7 Claims. (Cl. 62—108.5.)

1,851,740

1. The combination with an ice making compartment having an extended frost accumulating surface and an ice making receptacle having an extended surface in close juxtaposition to the first named surfaces of a metallic wire mesh fabric interposed between and in close juxtaposition to both said surfaces.

1,851,901. OUTDOOR REFRIGERATOR. John Robert Gran, Hialeah, Fla. Filed Sept. 12, 1930. Serial No. 481,539. 1 Claim. (Cl. 62—31.)

A refrigerator comprising a body adapted to be disposed within an opening of a building to protrude outwardly thereof and formed with spaced insulated inner and outer walls, the inner wall being composed of tiling having a mortar facing and a wire backing, the outer wall being composed of stucco and a wire backing, timbers spacing said walls from each other, a plurality of partitions within the body to form food compartments therein, an ice container mounted medially of the body and in the upper portion thereof, and doors mounted at opposite sides of the body for access to the compartment and container, respectively, the door to the container being accessible exteriorly of a building while the doors to the compartments being accessible from within said building.

1,851,948. GASKET. Otto M. Summers, Dayton, Ohio, assignor, by mesne assignments, to Frigidaire Corp., a Corporation of Delaware. Filed March 31, 1927. Serial No. 179,964. 4 Claims. (Cl. 288—1.)

1. Means for sealing a joint between two surfaces comprising in combination a flat independent ply of plastic material in contact with one surface, and sheet metal spring means betwen said ply and the other surface, said sheet metal spring means having an annular corrugation, said corrugation being adapted to flex in one direction when the surfaces are moved together and to flex in the opposite direction and maintain sealing contact with the plastic ply when the surfaces are thereafter separated.

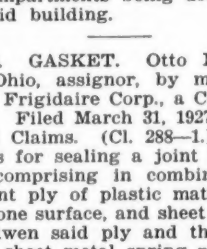
REISSUE

18,403. METHOD OF AND MEANS FOR COOLING PASSENGER CARS IN STATIONS. Charles W. Galloway, Baltimore, Md. Original No. 1,823,393, dated Sept. 15, 1931, Serial No. 480,490, filed Sept. 8, 1930. Application for reissue filed Jan. 12, 1932. Serial No. 586,228. 23 Claims. (Cl. 62—24.)

23. The method of cooling passenger coaches, which consists in drawing air from the atmosphere outside the coach through a cooling course having an entrance end, communicating directly with the atmosphere, and an exit end, by suction produced at the end of the course, cooling such air while in transit through the cooling course by sequential cooling stages produced by the cooling actions of a plurality of melting bodies of ice therein, and forcing the cooled air by pressure produced at the exit end of the course into the coach.

ISSUED APRIL 5, 1932

1,852,033. CHECK VALVE. Otto M. Summers, Dayton, Ohio, assignor, by mesne assignments, to Frigidaire Corp., a Corporation of Delaware. Filed Nov. 25, 1925. Serial No. 71,409. 25 Claims. (Cl. 251—119.)

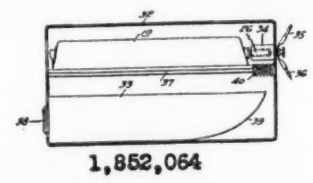


1,852,033

1. A fluid check valve comprising, in combination, a member providing a port and a rigid valve seat surrounding the port, a reed fixed at one end and having a valve portion at its free end engaging said seat, and yielding means seating the valve portion, said means applying yielding pressure upon said valve portion eccentrically of the seat in order that the valve portion will be tilted relative to the seat when fluid is forced under pressure through said port.

19. A check valve comprising a normally flat elastic member having a valve portion and a curved planar connecting portion for securing the valve portion to a valve seat, the valve portion being disposed at one side of the connecting portion and being connected thereto to provide a tilting action.

1,852,064. ICE CUBE REMOVER. Edgar D. Rosenberg, San Francisco, Calif., assignor of one-half to Raphael Sampson, Oakland, Calif. Filed Dec. 11, 1929. Serial No. 413,223. 5 Claims. (Cl. 62—108.5.)



1,852,064

1. In a device for freeing ice cubes, a tray having a plurality of partitions, electrical heating elements disposed within the walls of said partitions, plug terminals for said heating elements extending from one end of said tray, a chamber adapted to receive said tray and socket connectors in said chamber adapted to register with said plug terminals.

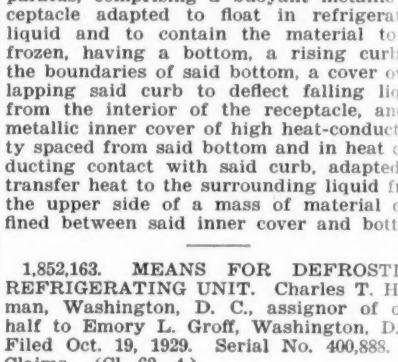
1,852,095. FREEZING APPARATUS. Michel P. Vucassovich, Gloucester, Mass. Filed May 27, 1930. Serial No. 456,144. 5 Claims. (Cl. 62—1.)

1. A freezer as an element of freezing apparatus, comprising a buoyant metallic receptacle adapted to float in refrigerating liquid and to contain the material to be frozen, having a bottom, a rising curb at the boundaries of said bottom, a cover overlapping said curb to deflect falling liquid from the interior of the receptacle, and a metallic inner cover of high heat-conductivity spaced from said bottom and in heat conducting contact with said curb, adapted to transfer heat to the surrounding liquid from the upper side of a mass of material confined between said inner cover and bottom.

1,852,163. MEANS FOR DEFROSTING REFRIGERATING UNIT. Charles T. Hoffman, Washington, D. C., assignor of one-half to Emory L. Groff, Washington, D. C. Filed Oct. 19, 1929. Serial No. 400,888. 14 Claims. (Cl. 62—4.)

1. In a refrigerator, an electrical switch for controlling the motor circuit, an electrical actuator therefor, means for manually closing the circuit to said electrical actuator, and means controlled by temperature within the cooling compartment for closing a circuit to the electrical actuator to restore the electrical switch to its normal position.

1,852,175. COMPRESSION UNIT. Edward B. Mallory, Tenafly, N. J., assignor to The Climax Engineering Co., Clinton, Iowa, a Corporation of Delaware. Filed Feb. 21, 1930. Serial No. 430,231. 8 Claims. (Cl. 230—207.)



1,852,175

1. A compression unit for refrigerating systems comprising operating mechanism including a motor and a refrigerant compressor connected to be driven thereby, means for admitting a lubricant to the moving parts of said operating mechanism, a pervious flexible supporting element for said operating mechanism and means for passing the lubricant admitted to said mechanism through said supporting element.

1,852,219. MILK COOLER. Gordon C. Sahnow and Wilbert Sahnow, Hillsboro, Ore. Filed Oct. 13, 1930. Serial No. 488,420. 1 Claim. (Cl. 257—199.)

A device to be used with a milk receptacle of the class described comprising a closure for the milk receptacle adapted for making a tight fitting connection therewith, a pair of headers disposed in spaced relation and depending from the closure, said headers being hollow, a plurality of corrugated plates disposed between the headers and forming passageways connecting the headers, a trough having a plurality of drain holes disposed therein being disposed above the corrugated plates and between the headers, a valve head disposed upon the closure and being in communication with the inside of the milk receptacle, said head being in direct alignment with the trough, and pipes secured to the headers for circulating a cool-

(*Continued on Page 7, Column 1*)

REFRIGERATION RUBBER WARE

Door and Frame Insulating Strips. Gliders for Refrigerator Legs. Top Hole Sections. Lid Collars, Sleeves, Brine Hole Stoppers for Ice Cream Cabinets, etc. Specializing in Parts Made to Customer's Design.

THE AETNA RUBBER CO.

ASHTABULA, OHIO

in Refrigeration

(*Concluded from Page 6, Column 5*)

ing medium therethrough and through the passageways.

1,852,228. CONSUMER PACKAGE. Clarence Birdseye, Gloucester, Mass., assignor to Frosted Foods Co., Inc., Dover, Del., a Corporation of Delaware. Filed Jan. 7, 1930. Serial No. 419,180. 3 Claims. (Cl. 206—46.)

1. A consumer package of a perishable food product, comprising an open-top carton packed full of a fresh food product, a loose transparent sheet bearing an identifying mark laid upon the product, and a sealed transparent wrapper enclosing the entire package and forming with the loose sheet a double cover through which the product is visible, the packed carton and its contents being frozen into a solid block.

1,852,370. PORTABLE ICE SCORING MACHINE. Ernest W. Pullman, Cushing, Okla. Filed Sept. 14, 1928. Serial No. 305,985. 3 Claims. (Cl. 125—13.)

1,852,388. APPARATUS FOR THE UTILIZATION OF SOLID CARBON DIOXIDE. William D. Wilcox, Idaho Falls, Idaho. Filed June 17, 1929. Serial No. 371,603. 6 Claims. (Cl. 62—91.5.)

1. In apparatus for the utilization of solid carbon dioxide, the combination of an insulated container, an opening therein with closable means for introducing solid carbon dioxide into the container, closable outlets at the upper and lower extremities of the container, an exterior connection between these outlets, a storage tank, means for passing gas from the container into the storage tank, means of withdrawing gas from the apparatus.

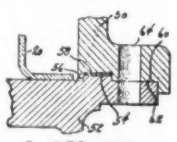
1,852,479. REFRIGERATING APPARATUS. Donald H. Reeves, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio., a Corporation of Delaware. Filed Feb. 27, 1928. Serial No. 257,333. 8 Claims. (Cl. 62—95.)

1. Refrigerating apparatus comprising in combination, a cabinet having vertical walls, a casing supported entirely by one of the vertical walls, and a refrigerating element supported within the casing and in intimate contact with the casing.

1,852,661. SHOW CASE REFRIGERATOR. Lester U. Larkin, Atlanta, Ga., assignor to The Warren Co., Inc., Atlanta, Ga. Filed Feb. 4, 1931. Serial No. 513,408. 2 Claims. (Cl. 20—56.5.)

1. In a show case refrigerator construction comprising a body portion, a plurality of panes of glass mounted in the front thereof to form compartments, said compartments being hermetically sealed, a conduit extending from said compartments, and means connected to said conduit and precluding transfer of air between the atmosphere and said compartments to compensate for differences in pressure in said compartments.

1,852,681. SEAL AND BEARING CONSTRUCTION. Russell T. Smith, Greenville, Mich., assignor to Gibson Refrigerator Co., Greenville, Mich., a Corporation of Michigan. Filed March 2, 1931. Serial No. 519,479. 9 Claims. (Cl. 308—187.)



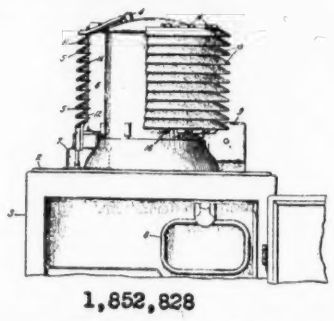
1,852,681

1. A combined seal and bearing construction for a casing having an apertured transverse wall through which a rotating shaft projects comprising a cupped plate secured and sealed to said wall and having an aperture through which said shaft projects, an anti-friction bearing surrounding said shaft and having a ring fixed to and rotating with said shaft, a non-rotating ring in the cup of said plate, an expansible bellows having its ends sealingly secured to said non-rotating ring and to said plate, and a coiled compression spring in said bellows and tending to expand the latter so as to bias said non-rotating ring into sealing engagement with said rotating ring.

1,852,707. REFRIGERATOR. Charles T. Hoffman, Washington, D. C., assignor of one-half to Emory L. Groff, Washington, D. C. Filed May 15, 1930. Serial No. 452,687. 8 Claims. (Cl. 62—4.)

1. In a refrigerator cabinet, the combination with the food compartment having a wall, a lamp compartment formed in said wall and having windows respectively opening at the outside of the cabinet and into the food compartment, a lamp in said lamp compartment, a switch for controlling the illumination of the lamp, and manually operated means for initiating the operation of said switch.

1,852,828. CONDENSER FOR REFRIGERATING MACHINES. Christian Steenstrup, Schenectady, N. Y., assignor to General Electric Co., a Corporation of New York. Filed Aug. 26, 1931. Serial No. 559,520. 13 Claims. (Cl. 257—36.)



1,852,828

1. A condenser for a refrigerating machine including a strip of metal provided with a fluid passageway at one edge thereof, said strip serving as a heat dissipating surface for cooling the fluid flowing through said passageway.

1,852,973. ICE BOX SCALE. Fred E. Justus, El Paso, Tex. Filed Aug. 13, 1929. Serial No. 385,489. 5 Claims. (Cl. 265—64.)

1. In combination with an ice box or refrigerator, a beam pivotally supported by the top wall of the ice box at a point intermediate its ends, an ice container connected to one end of the beam, guide tubes carried by said container, guide rods depending from the top wall of the ice box and freely slidable through said tubes whereby the container may have free upward and downward movement, an anchored coil spring, means connecting said spring to the other end of the beam, and means cooperative with said spring and the adjacent end of said beam whereby the expansion of the spring may be indicated as a function of the weight of material deposited in said container.

REISSUE

18,409. RESET MECHANISM FOR THERMAL CUTOUT SWITCHES. Malcolm E. Henning, Des Moines, Iowa, assignor to Penn Electric Switch Co., Des Moines, Iowa, a Corporation of Iowa. Original No. 1,841,477, dated Jan. 19, 1932, Serial No. 461,546, filed June 16, 1930. Application for reissue filed Jan. 25, 1932. Serial No. 588,799. 11 Claims. (Cl. 200—116.)

1. In a reset mechanism for thermal cutout switches, the combination with a switch member normally movable to open and closed circuit opening means for independently moving said switch member to open circuit position and a thermal latch for said means, of a reset member movable to latch said circuit opening means by means of said thermal latch, said reset member being operatively connected with said switch member to retain it in open circuit position upon such latching movement of the reset member.

TRADE-MARKS

Serial No. 321,084. Trupar Mfg. Co., Dayton, Ohio. Filed Nov. 12, 1931.

COLONIAL

For Electric Refrigerators.
Claims use since Oct. 3, 1931.

Serial No. 324,602. Grand Rapids Store Equipment Corp., Grand Rapids, Mich. Filed Feb. 29, 1932.

ZEROMATIC

For Refrigerated Display Cases and Refrigerated Storage Cases.
Claims use since July 1, 1931.

Serial No. 324,603. Grand Rapids Store Equipment Corp., Grand Rapids, Mich. Filed Feb. 29, 1932.

CHILL-OMATIC

For Refrigerated Display Cases and Refrigerated Store Cases.
Claims use since July 1, 1931.

MANY THEATRES TOO COLD, CARRIER ENGINEER SAYS

WATERBURY, Conn.—Many refrigerating systems used in theatres during the summer months create a positively unhealthy condition, William L. Keplinger of the Carrier Engineering Corp. told the Waterbury Kiwanis Club on April 6.

Theatre operators will soon be forced to temper the extreme coldness now found in film houses when the public becomes sufficiently informed on the matter to insist on moderate temperatures.

FACTORY MEN HOLD MEETING

MEMPHIS, Tenn.—One of a series of educational sales meetings sponsored by the Servel factory was held recently by the Lewis Supply Co., distributor for Servel Hermetic electric refrigerators in this territory.

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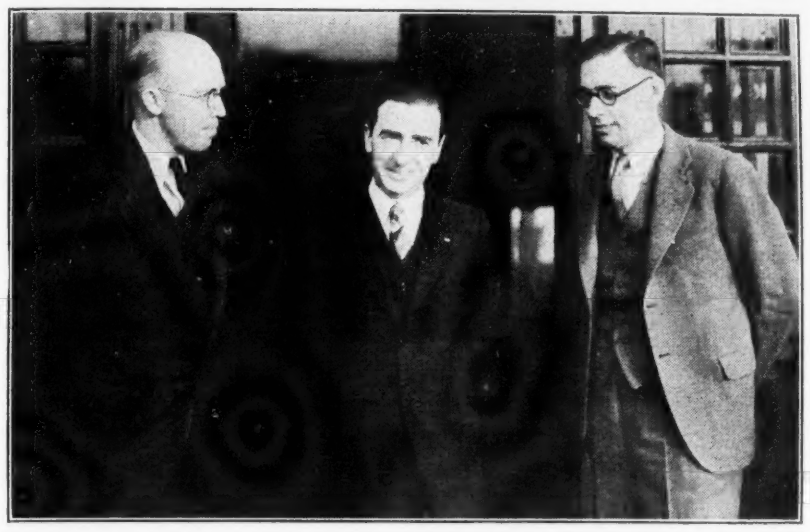
Stopping Over at Servel



En route to Florida for a vacation, George Monjian (center), president of the Chicago Refrigeration Service Co., stopped at Evansville to visit W. J. Aulsebrook (left), Servel commercial sales engineer, and C. L. Olin (right), Servel service manager.

F-12 WILL BE USED IN PULLMAN SYSTEM

(*Concluded from Page 1, Column 2*)

the condenser coil in the form of a gas, leaves as a liquid, and enters the receiver tank.

It is then carried to a special valve which allows a pre-determined amount of liquid refrigerant to enter the overhead cooling coil or evaporator, at which point the pressure is lowered, the liquid evaporated, and the temperature of the refrigerant reduced.

Fresh air and recirculated air, in the proportions of approximately 25 per cent and 75 per cent, respectively, are drawn up through the air filter, then passed over the cooling coil to be cooled and dehumidified.

The air is next forced into the main distribution ducts from which it enters the car through grilles suitably located. The refrigerant is carried back from the cooling coil as a gas, to the compressor where the cycle is repeated.

Heating Feature

A heating coil is also embodied in the overhead air conditioning series of units, its functioning being controlled by the thermostat. When heat is required in the car, the refrigerating machinery ceases to function and steam vapor from the steam trainline is circulated through the overhead heating coil. Filtered warm air is forced over this heated coil into the distribution ducts.

A small supply of steam vapor liberated in the filtered air passage adds the necessary humidification. The regular heater pipes near the floor of the car are also thermostatically controlled so that there will be two sources of heat when required. This floor heat also protects the water pipes against freezing.

The power for operating the cooling system when the cars are running is obtained from belts connected from the compressor to a special electric speed control, the latter driven through a Universal drive shaft, from a gear drive on the adjacent truck axle.

System Starts at 5 m.p.h.

The electric speed control functions on the principle of electric induction, and starts the compressor when the train speed reaches five miles per hour, and then increases the speed of the compressor up to a maximum of 420 r.p.m.

Regardless of high train speeds thereafter, the compressor continues at its predetermined speed, Pullman engineers claim. For power when the cars are standing still, a separate motor is provided. This is belted to the speed control.

Features of the Pullman air conditioning system include absence of water in the system so that no trouble from freezing can be encountered; the fact that power for operating the system when the cars are running is transmitted directly from one of the truck axles, without the employment of indirect electrical features; the only type of power required when cars are standing still is electricity; the air distribution throughout the interior is uniform and without drafts owing to the method of installing ducts and outlets; the added weight per car for this air conditioning installation is minimized due to the compactness of the equipment, absence of liquid for condenser cooling and absence of indirect electrical power features, Pullman executives explain.

The arrangement provides a pressure inside of the car slightly greater than that on the outside and results in a clean interior, free from dirt. It is believed that the cleanliness will mean longer life and less upkeep on the painted finish, window curtains, upholstery fabrics, and carpets. The absence of noise is another advantage which is made possible because of fresh air being furnished through the ducts, eliminating the necessity of raised windows.

COLD CARBONIC CO. STARTED IN NEW YORK CITY

NEW YORK CITY—Cold Carbonic Corp. has been organized with offices at 11 W. 42nd St., here, to distribute solid carbon dioxide produced by the Pennsylvania Sugar Co. of Philadelphia. The latter firm is erecting a 70-ton plant to make the substance.

Connected with the Cold Carbonic Corp. are J. D. Small, president; C. L. Jones, vice president, and Stuart Root, sales manager. Warehouses are located in Philadelphia, Newark, and Brooklyn, the announcement states.

SANITARY INTRODUCES 4 PORCELAIN MODELS

FOND DU LAC, Wis.—Four new all-porcelain electric refrigerator models were introduced by the Sanitary Refrigerator Co. on April 15, according to announcement by H. B. Miller. All models are one-door.

Gross capacities on the four models are as follows: 4.77 cu. ft.; 5.3 cu. ft.; 6.5 cu. ft.; and 8.1 cu. ft.

Model No. 477, the smallest, is 54 in. in height, 26 in. deep, and 24¼ in. wide. The next largest is the same width, 25 in. deep, 58 in. tall. Model 650 is 59¼ in. tall, 26 in. deep, and 28½ in. wide. The largest of the four is 58½ in. tall, 27½ in. wide.

The two smaller models have a 56 ice cube capacity, and the two larger, 84 ice cube capacity.

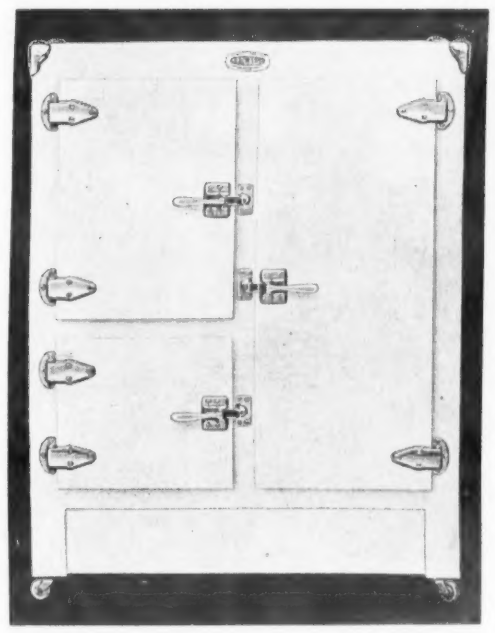
Net prices range from $142.50 through $220.50. This all-porcelain line supplements the line of porcelain-enamel combination refrigerators which is manufactured by the company.

SAN FRANCISCO PASSES NEW ELECTRICAL ORDINANCE

SAN FRANCISCO—Since March 1 Ordinance 9,120 (new series) of this city has been in effect, its enforcement being a responsibility of the Department of Electricity.

The ordinance regulates the sale or exposure for sale in the city and county of San Francisco of any electrical material, device, or appliance designed for attachment to or installation in or on any electrical circuit or system for light, heat, or power, and provides for the approval of such material and devices by codes recognized by the American Standards Association.

keep the buzzards away...



When a cabinet fails to hold the finish, or corrosion sets in, it is headed for the scrap heap where the vultures of the cabinet industry hold forth. Volume minded distributors and money spending consumers will not keep company with a cabinet that fails to hold its own.

Through the widespread adoption of SUPERIOR GALVANNEALED and SUPERIOR SUPER-METAL Steel Sheets, leading manufacturers have brought about a basic improvement in cabinet construction.

These sheets, over a period of six years under every conceivable test, have demonstrated their outstanding superiority where unusual corrosion-producing conditions are present. The zinc coating is not merely *put on*—it is *fused with the base metal* by a patented Heat Treating Process. It will not flake, chip or peel and the surface is adapted to receive paint, lacquer and enamel finishes without preparatory treatment.

- *The zinc coating is fused to the base metal and is highly Rust-Resisting.*
- *The sheets are soft and ductile — coating will not chip, flake or peel.*
- *Surface adapted to receive any finish without preparatory treatment.*
- *Patented Heat Treating Process amalgamates zinc coating with base metal.*

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Superior "Super-Metal" PATENTED PROCESS

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